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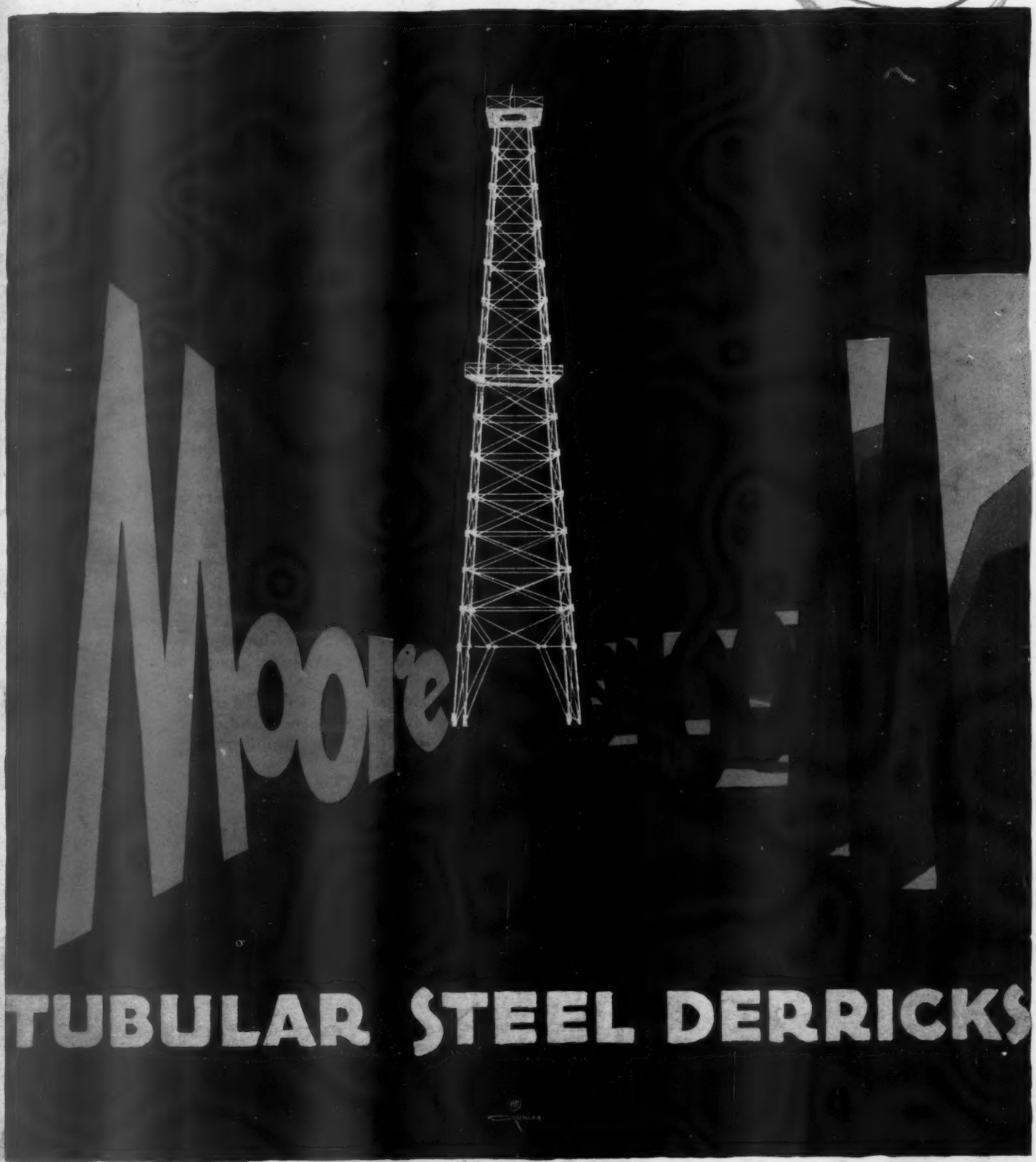

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The OIL and GAS JOURNAL

PRODUCING REFINING MARKETING

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Four Chief Factors Affect Situation

Highest daily average estimated production in 1926, week ended Dec. 25, 2,385,120 bbls. Lowest in 1926, January 30, 1,915,960 bbls.

Little River Pool Limits, Water in Yates Pool, Slowing Up of Consumption and Situation in California

By Andrew M. Rowley

Highest daily average estimated light oil production in 1926, week ended Dec. 25, 1,797,349 bbls. Lowest in 1926, Jan. 30, 1,371,600 bbls.

Four factors of importance to the general petroleum situation are engaging attention at this time—the fact the period of maximum consumption for this year seems to have ended with the advent of recent cold weather; the possibility that the Little River Pool in the Greater Seminole area in Oklahoma may not cover as much territory as had been thought possible, with a resultant lowering of ultimate production estimates; the water encroachment in the Yates Pool in Texas; and the feeling California has reached its peak of production for this year.

Tempering any effort to make a definite conclusion regarding any of these factors are many "ifs". The cold weather came rather unexpectedly and the industry may enjoy a big consumption during October and November at least. Making predictions regarding any pool in the Seminole area is dangerous business at best although indications now are the Little River Pool will be only a narrow strip as it is fairly well defined on the south, west and north. Operators are loathe to make any conclusions as yet regarding the Yates Pool. The encroachment of water certainly has not helped that pool although there is nothing to warrant any assertion that the ultimate production of the area will not be large. There is a large proven area in the field and the wells already drilled are capable of producing far more oil than they have been doing. On the heels of the statement it is believed California has reached its peak for this year comes word that the Pan American has cored a saturated oil sand in a test on the ocean front at Seacliff, Ventura County and that a new pool may be opened there.

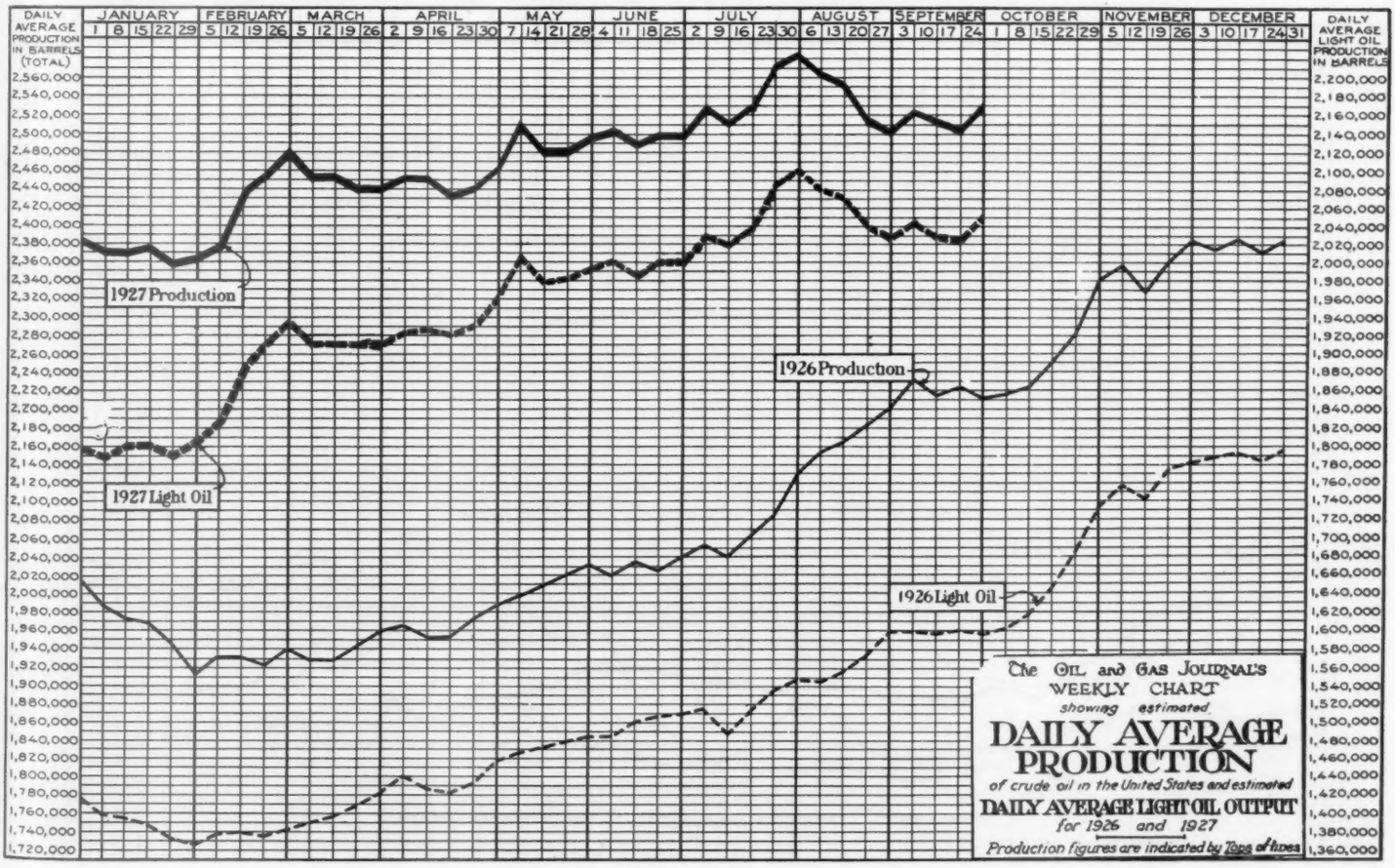
It is believed the price structure in the Mid-Continent area will be maintained for some time at least, and those prices are a fair barometer of prices in other sections. Production continues far above requirements and with a dropping off in consumption, this margin will widen unless there is a substantial drop in output at Seminole or water in the Yates Pool proves serious.

PRODUCTION IN THE UNITED STATES

Estimated daily average production of light and heavy gravity oil in the United States for week ended September 24 and a comparison with the previous week follows:

	Sept. 24		Sept. 17	
	Light	Heavy	Light	Heavy—
Oklahoma—				
Tonkawa	18,620	.....	18,665	.....
Burbank	35,880	.....	36,115	.....
Other Osage Fields	30,755	.....	31,040	.....
Cushing and Shamrock	21,285	.....	21,235	.....
Bristow and Eastern Bristow	24,935	.....	24,983	.....
Cromwell	13,210	.....	12,950	.....
Garber	10,890	.....	10,915	.....
Blackwell-Braman	9,095	.....	9,235	.....
Seminole	444,510	.....	426,385	.....
Wewoka	14,135	.....	13,615	.....
Northern Miscellaneous	111,140	.....	110,582	.....
Southern Fields	66,050	.....	66,200	.....
Total Oklahoma	800,505	.....	781,920	.....
North Louisiana	43,375	9,980	43,125	10,150
Arkansas	22,615	78,510	23,075	78,435
North Central Texas	154,754	.....	155,382	.....
West Texas	186,889	.....	178,432	.....
Texas Panhandle	93,455	.....	97,475	.....
East Central Texas	30,783	.....	31,302	.....
Kansas	105,110	.....	105,180	.....
Total Mid-Continent Area	1,437,486	88,490	1,415,891	88,585
Gulf Coast	.....	145,576	.....	145,556
Southwest Texas	.....	30,869	.....	31,020
Eastern	112,000	.....	114,000	.....
Rocky Mountain Area	74,511	.....	72,957	.....
California—				
Santa Fe Springs	39,000	.....	40,000	.....
Long Beach	91,000	.....	91,000	.....
Torrance	4,000	17,000	4,000	17,500
Huntington Beach	67,500	.....	68,000	.....
Dominguez	15,000	.....	15,000	.....
Rosecrans	8,000	.....	8,250	.....
Inglewood	21,000	12,000	21,000	12,500
Ventura Avenue	58,000	.....	58,000	.....
Seal Beach	71,000	.....	67,000	.....
Remainder of State	55,000	184,000	55,000	184,000
Total California	429,500	213,000	427,750	214,000
Total United States	2,053,497	477,935	2,030,598	479,161
Grand Total	2,531,432		2,509,759	

→ **Total Increase, 21,673 Bbls.; Light Oil Increase, 22,899 Bbls.** ←



Strong Kerosene Market in Oklahoma

Heavy Domestic and Export Demand in All Mid-Continent Areas Aids Prices. Changes in Other Products

By W. T. Ziegenhain

Kerosene featured the Oklahoma (Group 3) market with the domestic demand ready to take all that was available in the Mid-Continent. Gasoline consumption continued at a high rate as evidenced by the rapid movement of this product but cold weather along with snow and rain throughout a large portion of the Mid-Continent's normal marketing area threatens to decrease this movement. Gasoline prices remained unchanged with a lesser demand for the higher gravities than last week. This may be due to buyers anticipating the higher natural gasoline prices at the close of last week.

Natural gasoline continued to demand prices on a par with U. S. Motor refinery gasoline and although there was a good movement, the market could not be termed strong. Gas oil prices remained unchanged with a fair demand for low cold test material. Some of the larger domestic oil burner installations can use the heavier distillates and light gas oils satisfactorily and a portion of the present demand is coming from this source.

Distillates continued to move at a fair rate with no change in prices. Because of the wide range of grades being offered, prices ranged from 2½ cents for the heaviest to 3½ cents for the higher gravity treated, low-flash distillate. Lubricants strengthened slightly due to the improved conditions in the Gulf Coast area. Prices were unchanged, with the movement fair.

Wax Strong

Wax was generally strong, and although there is no great increase in its movement, refiners are getting fractionally higher prices. The domestic demand has gradually grown as a result of the low prices that have prevailed over the past six months and this demand is becoming an increasingly important factor. The domestic users purchase their needs in advance and call for the material at regular intervals. The are interested in an adequate dependable supply and although the prices govern the extent of its use in a great many cases, it is an essential commodity so far as the user is concerned, and its increased domestic use is affording the refiner an excellent outlet.

Stocks Less

During August, gasoline stocks, east of the Rocky Mountains, showed a decrease of 3,987,000 gallons, according to the report of the American Petroleum Institute. This decrease accounts for the greater operating margin afforded refiners and the generally relieved situation. Some refiners in the Mid-Continent are reporting all shipments being made from their current production. The increased use of closed cars and paved roads has gradually lessened the fluctuation between the summer and winter demand each year and this year will witness still further progress in this tendency. Refiners are mapping out their storage programs accordingly. Four and five years ago refiners stored several months' production in order to supply the needs during the summer months but now one month's production stored over the winter represents average conditions more closely.

The fact that consumption was maintained at a high rate long after the close of summer, and gasoline stocks were reduced to a lower margin than was at first thought likely, earlier in the sea-

(Continued on Page 186)

REFINED MARKET BAROMETER

A good export and domestic demand for kerosene, in all refining areas east of the Rocky Mountains, carried prices to slightly higher levels during the past week but the balance of the general refined oil market remained unchanged. Gasoline moved from the Mid-Continent at a fair rate but cold weather coupled with rain and snow throughout the northern states threatened to slow up this movement. Receipts of oil along the Atlantic coast reached a high mark as large volumes of crude and gasoline were imported from the Gulf Coast, California and South American ports. The natural gasoline market was not changed in the Mid-Continent, but the California market continues weak. Pennsylvania bright stock declined in price and some weakness was apparent in the neutral market as fractional price declines occurred in the lighter grades. Distillates were in greater demand, but purchasers were giving principal consideration to price. Fuel oil and gas oil were no stronger and were only in fair demand. Wax continued to strengthen in price as the domestic demand gradually increases.

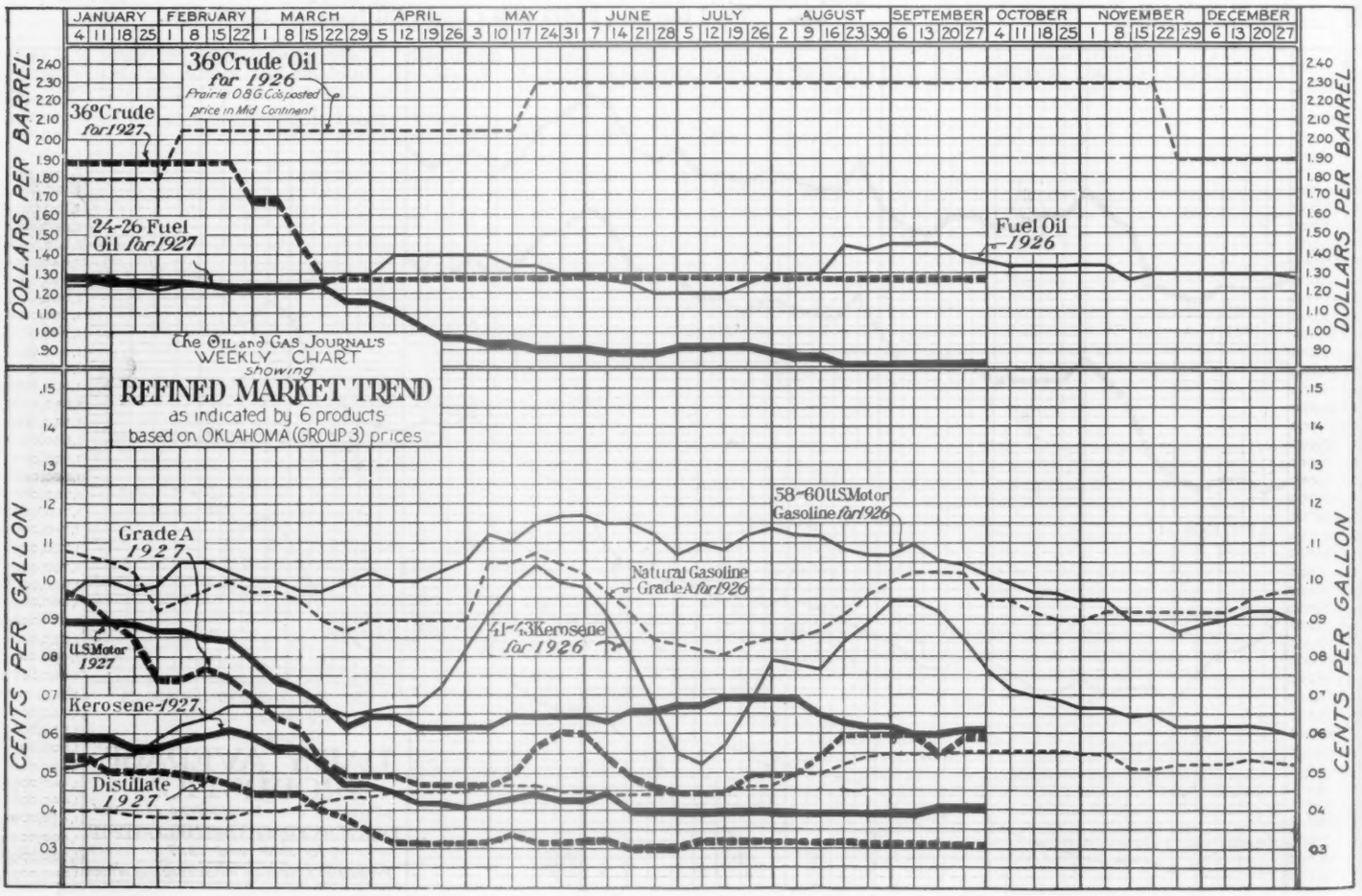
Mid-Continent—Refinery and natural gasoline prices unchanged, with movement slower as a result of cooler weather. Kerosene was strong at slightly higher prices. Lubricants remained unchanged. Distillates are being supplied at a wide range of prices and quality, with the general movement but fair. Wax gained a slight price advance as a consistent domestic demand continues.

Atlantic Seaboard—Kerosene remained strong as large shipments were made to China. Export prices were advanced one-half cent on all grades. Imports of crude and refined oils reached a high mark and tended to hold prices on all refined products at last week's level.

Pennsylvania—Gasoline continued in good demand, but prices remained unchanged. All grades of kerosene were advanced as a result of the better foreign and domestic demand. Wax was generally strong. Bright stock and certain grades of neutrals were weak and yielded to slight price declines.

Chicago—Kerosene demand fell off within the past two days and all other oils were generally weak. Distillates were in fair dmand, but most inquiries were for prices and the movement is not what might be expected, considering the colder weather throughout the northern states.

California—Refined oil prices remained unchanged, with natural gasoline very weak at last week's quotations.



Surpassing Petroleum Exposition

Greatest Showing of Oil Industrial Machinery and Specialties Is On In Full Swing, Closing Saturday

By James McIntyre

What higher tribute can be paid to the Fourth International Petroleum Exposition in Tulsa this week than to state the fact that for hour after hour, from morning until late in the day, it held the closest attention of a practical oil man who has been active in the industry for 63 years.

John H. Markham, 83 years old, an oil man since 1864 and still active as a producer and operator, was lost in wonder at the many new things he saw at the International Petroleum Exposition in an all-day visit on Sunday. Turning to a friend the veteran Mr. Markham, noted for his wit, said whimsically: "If Thede Barnsdall was to see this, he'd say 'Here, take my lead pencil, I'm going to get out of the business'." Mr. Markham was referring to the many changes and improvements that had come into the industry in recent years—since the death of his friend, Thede Barnsdall, for example: "This is not much like it was when I started in the business loading oil in barrels on Oil Creek in '64. It's an amazing exhibit. Why the labor-saving features of this show make drilling and producing as easy as a parlor game. I remember when you needed four horses to haul 500 feet of lumber and when you devised and hammered out tools as you had use for them. Here they all are; 65 years of oil region ingenuity with a dash of the scientific as a finishing touch rolled into one wonderful show."

And hours later Mr. Markham, notwithstanding he is an octogenarian and one of the oldest of the very oldtimers in the oil business, was to be seen in another part of the big grounds on a derrick floor expertly discussing some late improvement on a cable-drilling well.

The close attention this veteran gave every booth or out-door exhibit that caught his interest was a fine acknowledgement of the perfection of excellence which characterizes the Fourth International Petroleum Exposition. It is a great gathering of all that is best in machinery and appliances in use in the petroleum industry, and a liberal education in oil in all its phases from the well to the consumer. It held the close attention hour after hour of an oil man who had reached an age where most men would prefer the ease and comfort of a big arm chair, and his interest and attention, in a sense, tells the story of the quality of the exposition.

Part Science Has Played

The part science has played in the production of oil and the manufacture and transportation of oil products is featured in the Scientific and Technical Building, and in other buildings on the grounds. One may see the practical working of the air-gas lift in miniature; the whole operation of a modern cracking plant with the oil passing through the refinery from the crude tanks to the finished gasoline tanks; the freakish peculiarities of the Wilcox sand structure in the Seminole Field; samples of perhaps every rock formation in the State of Oklahoma, the torsion balance and its use explained by experts; likewise the seismograph and the magnetometer, modern adjuncts to the location of possible oil-bearing structure; the operation of a great natural gas system from the well to the kitchen stove; samples of crude oil from every part of the world; the original Drake tools and other ancient well drilling tools and devices which were hammered out by blacksmiths long since dead.

Practical Outside Exhibits

In the outside exhibits the latest in pumping machinery and rigs are shown in active operation. Rotary wells and cable tool wells actively drilling are there, with experts at hand to explain to the uninitiated the whys and wherefores of every operation. It would seem that nothing had been omitted from the show. Two hundred and fifty exhibitors have displays of the very latest they are manufacturing or selling and there is little on the ground that does not in some way play a part in the business of supplying the world with power, heat, light and lubrication.

Three previous shows have been held by the International Petroleum Exposition Co.—a corporation without profit—and they have all been wonderful exhibits, but so many new things have been introduced in the past two years that the present show is made greater than those that have gone before by reason of the fact that all that is new is there, presented in a way that any one can grasp its significance. The exposition is made easy for the visitor by the practical use to which so many of the exhibits are being put before their eyes.

The Official Opening

The exposition was officially opened Saturday, September 24, when President Coolidge closed the golden key which completed an electrical circuit and started the machinery, and at the same time "brought in" the Drake well on the grounds close to the speakers' platform.

Promptly at 2 o'clock in the presence of a large crowd of spectators and with high officials of the State of Oklahoma, city of Tulsa and the exposition on the speakers' stand, a flow of crude petroleum was seen to shoot over the top of the replica of the Drake derrick. To add realism the top of the boarded-up derrick was blown out by the force of the flow while the crowd cheered. The oil used in this demonstration had been produced on the same farm on which oil was discovered near Titusville, Pa., in 1859 and from a well not over 50 feet from the location of the original Drake well.

On the speakers' stand were Gov. Henry S. Johnston of Oklahoma; Mayor Herman F. Newblock of Tulsa; W. G. Skelly, president of the International Petroleum Exposition and Congress; Alf G. Heggem, president of the Tulsa Chamber of Commerce; Harry H. Smith, secretary of the Mid-Continent Oil & Gas Association, and the Rev. C. W. Kerr, D. D., of Tulsa.

Doctor Kerr, a native of Washington County, Pennsylvania, an oil-country resident throughout his life, delivered the invocation. Mayor Newblock extended a hearty welcome to the visiting oil men and others and was followed by Mr. Heggem, who spoke on behalf of the Tulsa Chamber of Commerce, which organization was the first to accept the proposal that a petroleum exposition be held in Tulsa in 1923 and which put its shoulder to the wheel and gave the exposition a good start. Governor Johnston in a short address paid a high compliment to the oil industry. He traced the progress of transportation from the days of primitive man to the present, expressing the thought that the progress of the human race could be measured by the progress in means of transportation. The vital part the oil industry plays in transportation was emphasized by the speaker and the important place Oklahoma occupies in the oil industry was happily commented on by the chief executive. He closed by giving the visitors from other states a welcome to Oklahoma, "the greatest of oil states." President Skelly of the International Petroleum Exposition, closed the ceremonies with a brief speech of welcome and the hope that oil men would get the best results out of the great exposition of oil industrial equipment.

Harry H. Smith introduced the speakers in their turn. The Akdar Shrine Band played patriotic airs and when President Coolidge touched the button and the

(Continued on Page 186)

NIGHT VIEW OF THE FOURTH INTERNATIONAL PETROLEUM EXPOSITION

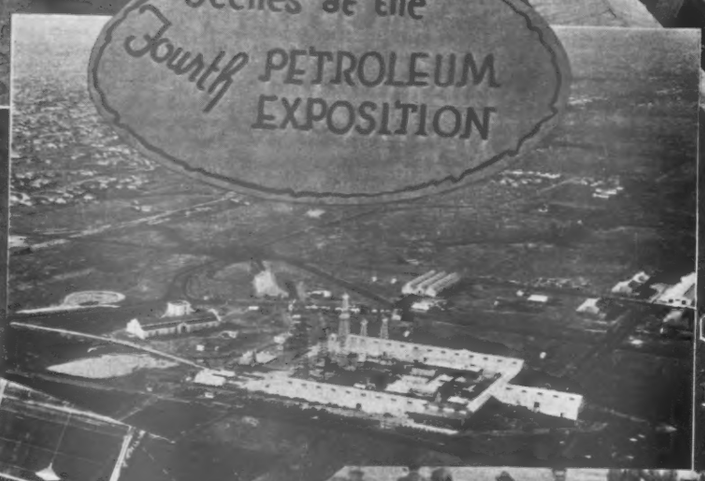
Scenes at the Fourth PETROLEUM EXPOSITION

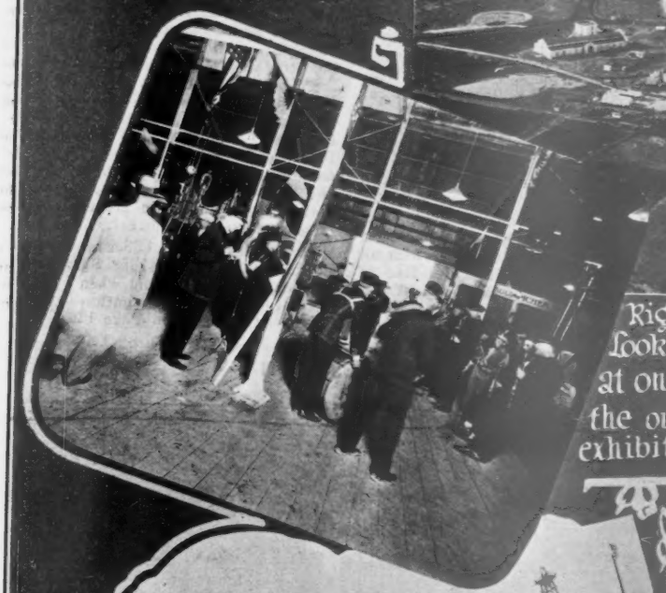
View in Science and Technical Building

Below: Ready to drown out the engines.

Small buildings housing outside exhibits.

Left: Airplane view of Petroleum Exposition

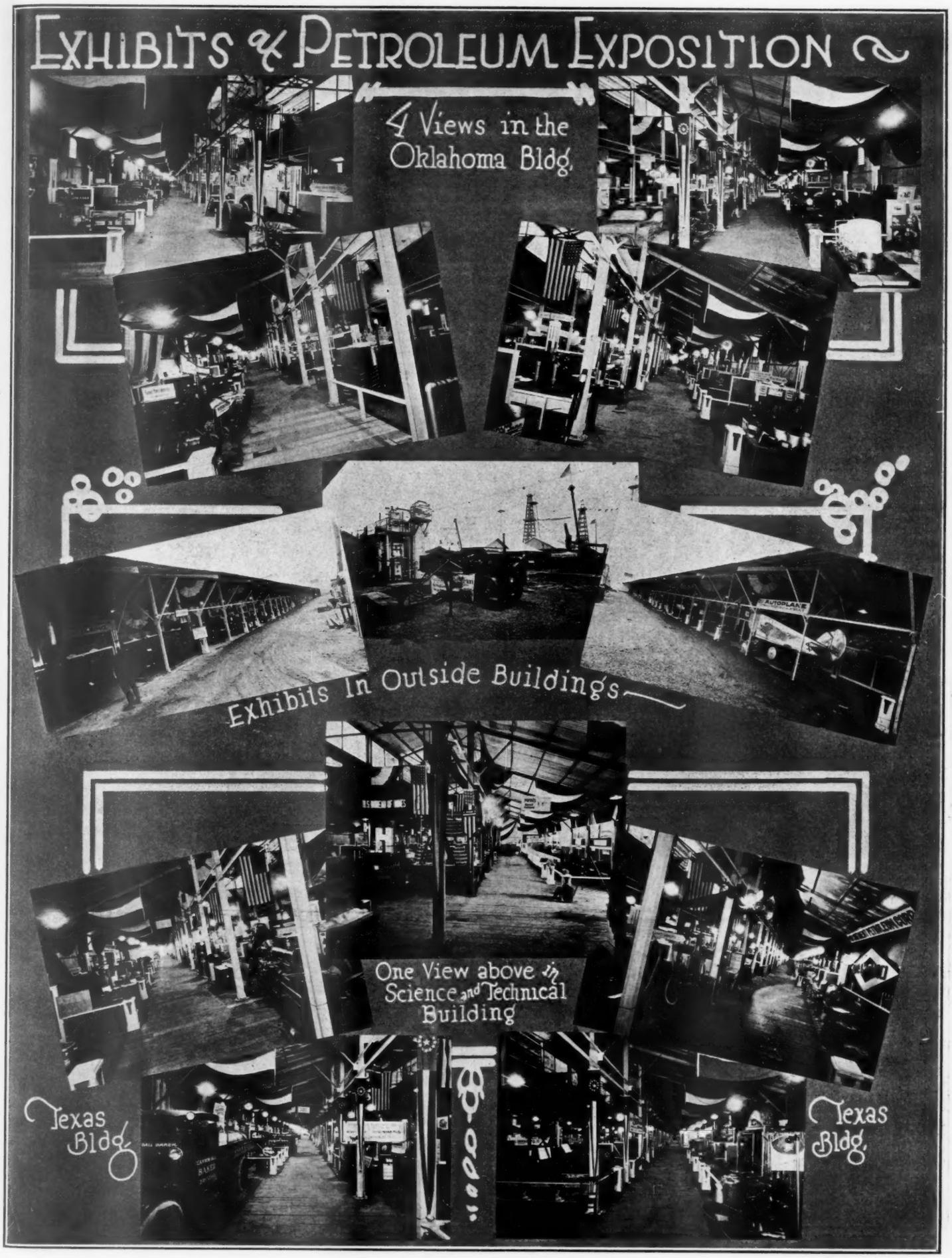




Right: Looking at one of the outside exhibits

Looks like town lot drilling

Actual drilling on the grounds


EXHIBITS of PETROLEUM EXPOSITION
4 Views in the Oklahoma Bldg.
Exhibits In Outside Buildings
One View above in Science and Technical Building
Texas Bldg.
Texas Bldg.

No use asking,—
"how deep are you"?
Below: W.G. Skelly, president of the Exposition, pinning Rockefeller medal on J. Alek Stephenson, the "oldest old timer."
GENERAL MANAGER
A little jazz during a shower
Below: First and second teams in first aid contest
Some of the old timers left to right
J.W. Dwiggins
John Champion
J.H. Waggoner
T.D. Farrell
Mike McCool
L.M. Kleckner
I.C. McBride
L.L. Beatty
Philip Kleckner
J.A. Stephenson
Side lights of the BIG OIL SHOW
Big Derricks attract attention.
First aid teams demonstrating work

Overcompetition Oil Industry's Bane

Not Fault of Leaders But Forced By Law. Permission To Co-operate Subject to Court Approval Suggested

By Phillip Kates

In the Sunday newspapers of September 25 appeared a syndicated article by Hubert Work, secretary of the Interior and chairman of the Oil Conservation Board, on the present difficulties of the oil industry.

The fact that so high an official should issue a special article, under his own name, is important in itself. But the contents of the article are, when analyzed, extremely startling.

That article may, indeed, contain the germ of the solution of the troubles of the industry.

Since the first report of the Oil Conservation Board, issued in September of last year, the troubles of the oil industry have been the subject of discussion, not only among oil men, but in the public press, among economists and even politicians. It is almost certain that legislation of some kind affecting the industry will be introduced at the coming session of Congress in December. And there is a well-defined feeling that such legislation will be regulatory in character.

When one realizes, as Secretary Work points out, that the capital investment of the oil industry is in excess of $11,000,000,000; that the stockholders and bondholders of this capital investment are in excess of 1,000,000 people; and that the control of the oil supplies of the world now engages the attention of every major country, and may itself be the cause of a future war, the importance of a proper approach to the subject is patent.

The oil industry is so tied up, not only with national prosperity, but with national safety, that a mistake would be disastrous.

After a year's discussion the unanimous opinion seems to be that the trouble appears to arise from what Secretary Work calls "overcompetition."

Competition to Blame

Competitive drilling has brought on a flood of oil; and competition in distribution, he notes has resulted in over 250,000 filling stations.

We have then a condition where competition in producing has reduced the price of crude oil to an unprofitable figure, and competition in distribution so raises the price of the finished product to the consumer that the public cannot understand why the price of oil should be raised.

Each of these questions has been fully discussed separately; but it is only when they are brought together that the full effect on the industry and on the public is seen.

We have competition in production, which produces an oversupply, increasing the carrying charges, and we have competition in distribution, which duplicates service, and raises the price to the consumer.

When more of a commodity is produced than there is a demand for, it must be stored; and the carrying charges frequently equalize the lowered price. And these carrying charges really represent a waste of capital, or a loss of profits. And when distributing service is duplicated profits are again lost in unnecessary costs.

It would seem apparent then that the present situation comes from the evils of competition. And the solution offered is either, voluntary co-operation within the industry, or governmental control.

The suggestion of government control is naturally disturbing. But the public appears to have been prepared for the idea, by the constant iteration of the statement that the troubles of the oil industry come from the fact that the various units will not "co-operate." Newspapers, unfamiliar with actual conditions, or overlooking the main question, have damned the leaders of the industry, until the public feels that the men in control do not understand their own business. And when the public feels that to be a fact government control will appear to be the proper remedy.

Forced by the Law

But the fact is that this competition, instead of arising from the plans of the heads of the industry, has been forced on it by law.

The tremendous expansion of the industry arose immediately after the dissolution of the Standard Oil Company. Because that expansion came after the dissolution split up the old company into competing units many thought that competition in fact aided the industry. The old Standard has many sins to answer for; but the idea of a combination of interests, a parcelling out of territory, and the elimination of competition was basically sound.

We have the word of the Oil Conservation Board and of Secretary Work that the present "overcompetition" in the oil industry is wrecking it. But unless there can be regional combines any competition is "overcompetition." Professor Jenkins, who from 1899 to 1901 was employed as an expert by the United States Industrial Commission to investigate the trust question in the United States and Europe, long ago pointed out that certain great industries, such as oil, sugar, steel, in fact any industry that required the use of great units of capital, was not properly the subject of competition. As he said, competition among great businesses which depend on the use of capital, instead of individual ingenuity, may result in a condition which destroys profits and ultimately wrecks the business. The reason being that because of the great capital involved, the competition may continue long after the business has ceased to be profitable; and because of the fact that the units are evenly matched; their weapon being capital.

Because of the peculiar nature of the oil producing business the use of great masses of capital in competitive drilling has produced the very result that Professor Jenkins long ago foresaw.

Antitrust Acts

Yet, during all this period the Sherman Law has remained on the book and all the oil producing states have similar antitrust acts.

We have then, a condition forced by law, not by the operation of the laws of business. The tendency of the oil industry was to combine; the law forced competition. And for a generation this condition has existed.

It is unfair then to lay the blame either to the inefficiency or greed of the heads of the oil industry.

Secretary Work in his latest article rightly says that the lawmakers have stood by while the procession of engineers, geologists and machinery manufacturers have made possible the greatest flood of oil in history. He includes the law interpreters; but it is somewhat unfair to lay the blame on the courts, whose function is to declare, but not to make the law. The Sherman Act and the state antitrust acts stand unmodified and unrepealed, and the courts can only enforce them.

This idea of enforced competition has become so ingrained in American thought that it is felt that combinations to restrain competition are inherently illegal. But, the United States appears to be the only nation that has adopted this principle as its basic business law.

Example from England

Prior to the adoption of the Sherman Act, and to the passage of the antitrust acts of the States, the question as to the legality of a combination was one for the courts. And it is still so in England. In August the writer heard argued and decided in London a case involving the consolidation of the rope business. John Stephens & Son, Limited, had acquired a number of corporations engaged in the same business. Under Section 9 of the English Companies Act, it applied to the Court of Chancery for approval of a modification of the articles of each of the corporations, which would enable each separate unit to guarantee the accounts of any or all of the other companies. Justice Eve, in the Chancery Court, denied the application. His attitude was strictly American. During the argument he said: "You will never convince me that any combination of manufacturers puts down competition for the benefit of the public. Such combinations are against public policy."

The following day the case was appealed to the Appeal Court, and was heard by the Master of the Rolls, and Lords Lawrence and Sargent.

The appeal was heard the day following the appeal. At the argument it was contended that the alterations in the articles were to enable the parent company to introduce a central selling system, in order to reduce costs, and to enable the business of rope producing to be carried on more economically and efficiently.

Mr. Maugham, K. C., who argued the case, said: "Indeed it has become apparent that, in this country at least, we cannot say unrestricted competition is desirable. The legislature has approved a vast scheme of compulsory amalgamation in the case of railways and has recently approved a scheme for encouraging in a remarkable way the amalgamation of colliery companies."

These remarks apply with equal force to the United States.

Excessive Competition

The presiding justice then asked: "Is there any evidence before the court that the effect of the combination has been to raise prices?" And Lord Justice Sargent remarked: "There is no question that you may have an excessive combination resulting in monoply and in harm to the public. But it is also the case that you may have such excessive competition as to result again in harm to the public and the producer."

The judgment of the lower court was promptly reversed and the combination approved.

Such a judgment would be impossible in an American court because of the Sherman Act and the antitrust acts of the States.

Yet we have the consensus of opinion, headed by the Oil Conservation Board, that excessive competition is the cause of the trouble in the oil industry today.

It would seem that much of the discussion of the police power of the States, and the war power of the Nation, is beside the point. If competition is causing trouble, why enforce competition? And until consolidation has been tried under proper safeguards, why compel government regulation?

The English Companies Act appears to be common sense. Permit consolidation, unless that consolidation is harmful to trade or to the public.

Of course, though we pride ourselves on being faster than other nations, one cannot imagine such an important case being tried in the Chancery Court on Wednesday; appealed to the high court on Thursday, and argued and decided finally on Friday. We can, however, provide some machinery that can function with reasonable speed.

Permission to Combine

We might then suggest as the first step, not government regulation, but permission to combine. The word now used is "co-operation." But in business co-operation means combination, and nothing else.

We cannot hope that the various units in the oil industry or any other industry will "co-operate" for the benefit of future generations. The stockholders of the company are the parties that must be protected; always, of course, with the understanding that a combination injurious to the public will not be permitted.

As a suggestion for legislation to permit co-operation, Congress and the oil-producing States might enact a law providing:

"Combinations in restraint of competition between various persons (including corporations) in the same business way or legal provided such combination is first approved by (a court or other governmental agent)."

(Continued on Page 179)

Still Guessing About the Yates Pool

Appearance of Water May Be Misleading. Possible Greater Drilling Campaign. Eventual Use of Air Lift

By C. D. Lockwood

FORT WORTH, Tex., Sept. 26.—Partial opening of the Mid-Kansas and Transcontinental producing wells in the Yates Pool of Pecos County during the past week, coupled with the appearance of water in three edge wells near the eastern limits of this prolific area, have given rise to erroneous impressions in some quarters. Reports which have gained currency would make it appear that the Mid-Kansas wells were all opened up to their fullest extent for several days during the week with the result that the total production from 12 producers on this property amounted to only about 25,000 bbls. daily.

As a matter of fact, several of the 12 Mid-Kansas and Transcontinental producers were partially opened for about 4 days and the remainder continued to flow through one-fourth inch and five-sixteenths inch chokes against a back pressure of several hundred pounds. The exact pressure is not known because the Mid-Kansas doesn't have gauges on its wells but the pressures in the Marland Oil Co., California Co., and McMan-Marland producers, which were flowing through one-fourth inch,, five-sixteenth inch and three-eighths inch chokes, ranged from 300 to 500 pounds.

The accompanying tables show the status of all wells in the field on September 20, and the daily production gauges of the Mid-Kansas wells from September 18 to 23, inclusive.

The total production of the 12 wells was 28,177 bbls. on September 19, and 23,548 bbls. September 20. It is more than probable these wells could double that amount if fully opened.

On September 20, for instance, Mid-Kansas & Transcontinental's No. 6 Yates-A, which is regarded as the biggest potential well in the field, was allowed to produce 1,287 bbls. It flowed through a one-fourth inch choke for 14 hours and was then shut in completely for 9 hours. When opened up for 1 hour through four lines, consisting of one 2-inch, one 3-inch and two 4-inch carriers, it flowed 929 bbls. in that 1 hour.

Mid-Kansas' No. 3 Yates-B, north offset to Marland Oil Co.'s No. 1 Yates-A which is affected by water, has not been reached yet by the sulphur fluid. At the same time when widely published reports had it making all the way from 10 per cent to 96 per cent water, on September 20 this table shows it flowed 2,137 bbls. in 4 hours through a 3-inch line.

Wary About Water

Engineers and production experts are wary about expressing predictions concerning the seriousness of water in the Yates Pool. Most of them admit they don't yet know exactly what they are up against. The encroachment of water in these three wells which are so low on the structure doesn't necessarily mean that the driving force behind the head of oil is hydrostatic, in the opinion of some authorities, although it points in that direction.

If water pressure instead of gas is driving the oil out of the ground at the shallow depth of 1,000 to 1,300 feet with such tremendous force (rock pressures as high as 650 pounds have been gauged in the Yates Field where 350 or 400 pounds would be high at that depth) then the ultimate recovery may be greater than would be the case if gas is the propelling medium, in the opinion of some production engineers. There isn't much gas in this area and it will likely be exhausted rather quickly.

YATES FIELD, PECOS COUNTY
Daily Gauges of Mid-Kansas & Transcontinental Wells
September 18-23, inclusive

Well No.	18th	19th	20th	21st	22nd	23rd
1 & 3-A	962	937	964	954	877	745
2-A	457	422	457	439	125	232
4-A	620	619	602	650	622	604
5-A	310	310	315	317	310	307
6-A	447	437	1,287	465	357	270
7-A	1,544	5,205	4,087	1,384	542	554
1-B	6,465	6,897	4,705	320	690	535
2-B	4,207	3,107	3,840	4,190	952	582
3-B	2,990	2,305	2,137	1,205	Shut in	1,052
1-C	3,935	4,166	2,364	3,156	739	279
Smith-Taylor-1	3,157	3,722	2,790	2,445	1,175	767
Totals	25,094	28,177	23,548	15,525	6,389	5,927
(Note: All above wells partially pinched every day.)						
Deliveries:						
To Hurdle	13,846	13,461	13,148	.....	.....	.....
To McCamey	5,263	5,154	5,043	5,269	5,344	5,231

STATUS OF PRODUCING WELLS IN YATES POOL
On September 20, 1927

Company, Well	Prod.	Remarks
Mid-Kansas, 1 Smith-Taylor	2,790	Through one 3-in. and 7-16-in. for 17½ hrs. and through 1 7-16-in. for 6½ hrs.
Mid-Kansas, 1 Yates-A & 3-A	964	Through one ¼-in. 24 hrs.
Mid-Kansas, 2 Yates-A	457	Through one 5-16-in. 24 hrs.
Mid-Kansas, 3 Yates-A	*	Through one 5-16-in. 24 hrs.
Mid-Kansas, 4 Yates-A	602	Through one 5-16-in. 24 hrs.
Mid-Kansas, 5 Yates-A	315	Through one ¼-in. for 24 hrs.
Mid-Kansas, 6 Yates-A	1,287	Through one ⅛-in. for 14 hrs.; shut in for 9 hrs.; through one 2-in., one 3-in. and two 4-in. for 1 hr., 929 bbls.
Mid-Kansas, 7 Yates-A	4,087	Through one 2-in. 18½ hrs. and one 5-16-in. 5½ hrs.
Mid-Kansas, 1 Yates-B	4,705	Through two 2-in. for 18½ hrs.
Mid-Kansas, 2 Yates-B	3,840	Through two 3-in. for 20 hrs.
Mid-Kansas, 3 Yates-B	2,137	Through one 3-in. for 4 hrs.
Mid-Kansas, 1 Yates-C	2,364	Through two 2-in. for 16½ hrs., one 2-in. for 2½ hrs., shut in for 5 hrs.
California Co., 1 Yates	721	One ⅜-in. 24 hrs. B. P. 500 lbs.
McMan & Marland, 1 Yates	475	One ¼-in. 24 hrs. B. P. 300 lbs.
Marland Oil Co., 1 Yates-A	735	One 5-16-in. 24 hrs. B. P. 405 lbs., water content 7 per cent.
Gulf Prod. Co., 1 Thompson	None	Shut in, 20 per cent water.
Allsman & Bell, 1 River Bed	95	Flowing by heads through 2½-in. tubing, ⅛ to 14 per cent water.
Red Bank Oil Co., 1 Smith	None	Shut in, no storage.

*Production of No. 3 Yates-A included with No. 1-A.

The most important effect of this water encroachment, however, is the fact that it almost necessitates keeping the wells pinched in heavily. Regardless of what the potential openflow capacity of the field may be, if the operators there can't flow the wells wide open it doesn't mean much. Therefore, the effect of the Yates Pool on the present or near-future market, is somewhat reduced.

Enlarged Drilling

Another effect, however, partially, if not wholly, offsetting the former, is the probability that a greatly enlarged drilling campaign will be inaugurated as a result of the water intrusion on the east edge of production. Owners of acreage on the flanks of the structure may feel that if they are to get any oil out of their property at all they will have to do it before the operators on top of the structure draw the water level up to them. And that will in turn force some drilling on the higher parts of the structure.

At this writing engineers do not know for sure whether the sulphur fluid in the Gulf Production Co.'s No. 1 Thompson, the Allsman & Bell's No. 1 Pecos River Bed, and Marland Oil Co.'s No. 1 Yates-A is entirely edge water or bottom water. If it is entirely an edge water condition, considerable time may elapse before the main field is affected at all. It is interesting to note that the Independent Oil & Gas Co. drilled down to the water on the west flank of the Hendricks Pool in Winkler County when there were only four other producing wells in that area. However, the Independent test was small and was thought by some at that time to be on the other side of a fault. The water was plugged off and nobody seems to take it into consideration at all now in estimating the future possibilities of that field.

Production Will Be Large

There is this much to be said of the Yates Pool. Its subsurface structure has

(Continued on Page 186)

More Uses Solution of Oil Problem

Natural Gasoline Manufacturer Believes Greater Utilization Thorough Research Will Solve Overproduction

As a solution to the overproduction of crude oil the oil industry should pay attention to the creation of new outlets for petroleum products, according to D. E. Buchanan, vice president of the Chestnut & Smith Corp., Tulsa. Mr. Buchanan, who returned early in the month from a three months' business trip to European countries, has spent considerable time during the past year in the study of new uses for natural gasoline of which his corporation is a major manufacturer.

In the opinion of Mr. Buchanan the development of new markets for the products of petroleum and gas has wide possibilities not only in the natural gasoline phase but in the oil industry generally. In this connection he points out that in enlarging the demand for petroleum the aim of the industry should be to create new uses rather than in endeavoring to replace the products already manufactured by other industries. The latter practice, he says, generally brings about a competitive situation which means low prices both for the oil industry and the industry which it is endeavoring to supplant.

Loss Would Finance Research

The general policy of the oil industry now is to wait until outsiders discover and develop a market for products obtainable from crude oil, Mr. Buchanan said. In this connection he points out that a small fraction of the loss to the industry this year, due to the low prices, would finance research programs to create new outlets to absorb future supluses. These benefits, he says, are of a permanent nature in contrast to curtailment programs which at best are merely temporary remedies with the probability that overproduction conditions will be duplicated in the near future. As one assured major outlet Mr. Buchanan points to the oil domestic burner consuming the distillate fractions of crude oil as fuel. This use would now be much greater had it received the support of the oil industry a few years ago. The development of this outlet has been largely left to those not directly connected with the oil business, resulting in many misunderstandings between the buyers and sellers, which has retarded its growth.

Mr. Buchanan's trip to European countries was made largely for the purpose of investigating the foreign demand for special products which his corporation is now selling in the domestic markets. These products have been made possible through changes in the manufacturing processes of the corporation's natural gasoline plants in the Mid-Continent Field. Of particular interest to the foreign trade is a specially stabilized motor fuel which is now being used by airplanes in this country. This product is now being transported by boat without blending with refinery gasolines or naphthas.

Foreign Demand Less

That the petroleum industry of this country will not be called upon to furnish as large a percentage of gasoline and lubricating oils for foreign consumption in the future as it has in the past is an interesting observation of Mr. Buchanan, based on his contact with European markets. In his opinion the Bureau of Mines reports, which show that so far this year gasoline exports have been less than last year for the same period, reflects a condition which will continue.

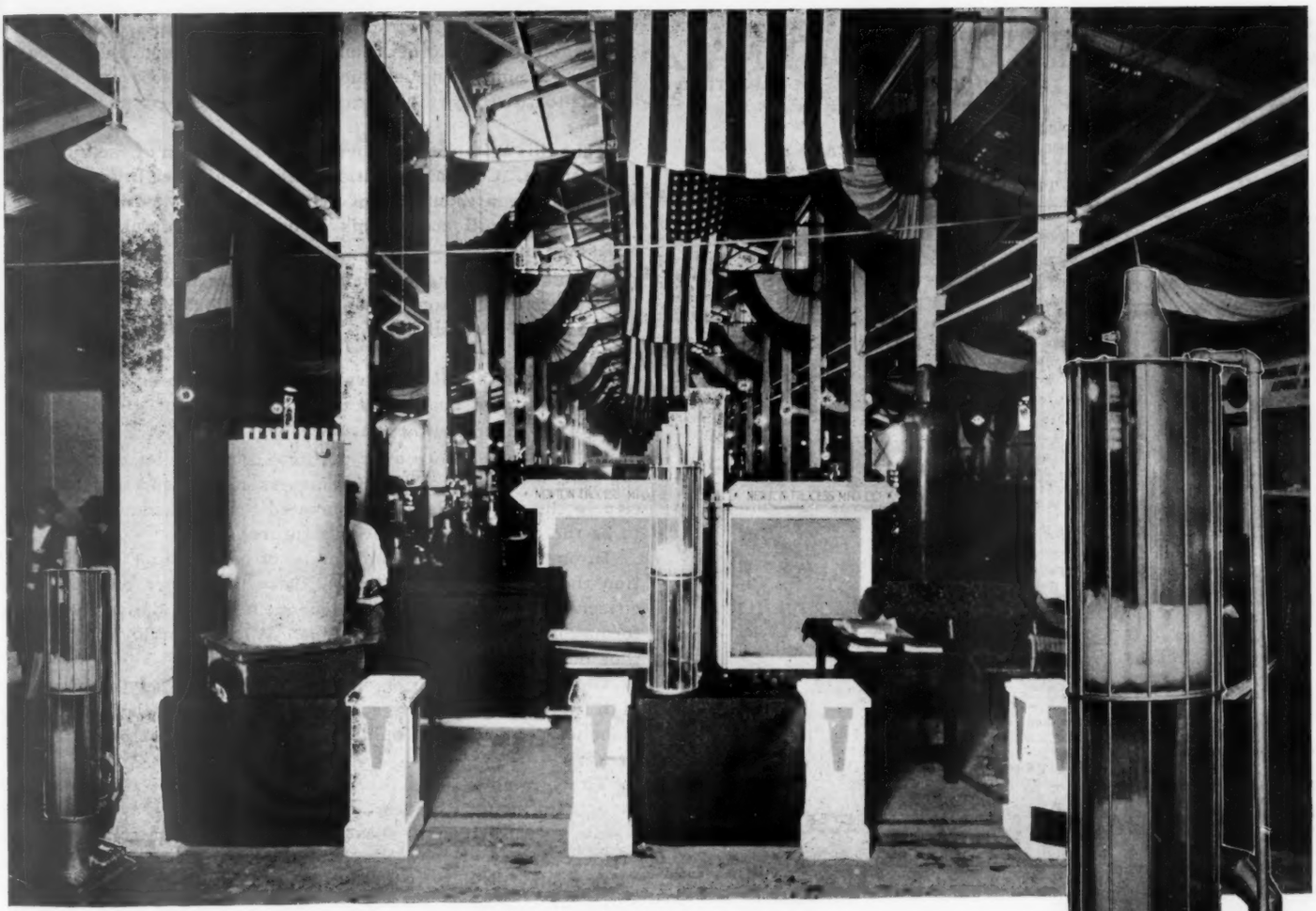
This condition is being brought about by the enlargement of foreign refining facilities, with the Russian situation an important factor at this time. Mr. Buchanan's investigation supports the contention of those who in recent months have pointed out the importance of the Russian oil fields as a source of world supply. In addition the expansion in refining capacity in South America and Europe gives new sources of supply for the foreign buyers. Mr. Buchanan believes there will continue to be a steady increase in foreign gasoline consumption due to the greater number of motor vehicles in use, but he is of the opinion that the bulk of this increased demand will go to refiners located outside the United States.

Conditions Abroad

Conditions in regard to petroleum markets in European countries that he visited are much the same as in this country, Mr. Buchanan said. The dominating position of the United States in the petroleum industry is generally recognized, he said. Buyers and sellers in foreign countries look to the market developments in this country as the basis for their own transactions.

Of the several countries which he visited, Mr. Buchanan was particularly im-

(Continued on Page 186)



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MEMBER AUDIT BUREAU OF CIRCULATIONS

A REAL NATIONAL PERIL

Congress is only a little over two months away and leaders in the industry are becoming anxious over what it may do to the oil business.

The next session of Congress will see the introduction of one or more petroleum bills to give the Federal Government a voice in the conservation of petroleum, Walter C. Teagle has just told the Associated Press, thus confirming the warnings in The Oil and Gas Journal during the spring and summer.

Everything pointed that way. The rising tide of overproduction, the clamor about waste of oil and the fact that we are on the eve of a national political campaign made it certain that we were due to have some more sensationalism about the oil business.

The agitation is now in full blast. The Hearst papers throughout the country are playing it up with cartoons and editorial demands for government regulation of the oil industry.

There is the familiar caricature of "Greed" chopping the tree of "Natural Resources." There is another picture of a reckless joyriding carful under the banner "Wasteful Wanton Oil Production" with Uncle Sam as a motor cop lurking around the turn and the title, "Needed, a Traffic Cop."

Editorially it is asserted that "The continued overproduction imperils the Nation's future. There is only one power strong enough to stop such reckless joyriding. Uncle Sam will have to assert control."

Another article declares that "the next Congress should establish a Federal Oil Commission like the Interstate Commerce Commission for the railroads, and the law should prescribe the enforcement of unit operation as the first duty of the commission."

Day after day this propaganda is put before the people in a chain of papers published in a string of cities from coast to coast. The oil industry is pilloried as wantonly wasteful, joyriding at the public expense, and the people are told nothing can stop it but regulation by the Federal Government.

Talk about imperilling the Nation's future! What could be more dangerous than the growing tendency to monopoly in the manufacture of public opinion exemplified in the relentless expansion of the chain newspapers. The readers in city after city find themselves deprived of their home newspaper, bought out by one syndicate or another, and instead of independent instruction and enlightenment on the issues of the day, are fed canned editorials and standardized cartoons calculated to make them so many mental sheep.

Take this agitation for Government regulation of the oil industry for example. Constant iteration will get this idea into the heads of thousands upon thousands of people who know nothing of the oil business but will accept this demand for Federal regulation as necessary and just.

Popularity-seeking politicians will seize upon this situation to make themselves prominent in denunciation of the oil industry, promising all sorts of benefits to follow regulation by the Government.

Today it is the oil industry's turn. But suppose tomorrow some other industry or business is made the target for such a campaign, what better chance will it have?

Or, take any economic or political issue and let it be treated in the same way by the chain newspapers as they spread from city to city in the monopolization of printed opinion and what are likely to be the effects on the Nation's future?

In one big American community of more than 1,000,000 population there is today not a single daily newspaper owned by local citizens. The public there is dependent for its daily news and information upon chain publications. With the mind of the masses thus moulded what of the Republic?

Government regulation, indeed! Who can say it may not be high time for Congress to concern itself with legislation to prevent monopoly of published opinion, if freedom of the press is to survive?

The oil industry is the immediate victim of this system but thoughtful men can understand that there is no graver peril to the Nation's future than in the concentration of control of the press of the country.

It would be well if at the coming session of Congress some representative or senator would have enough courage to arise in his place and direct the attention of the Nation's lawmakers to this alarming phase of present developments. It would certainly be of vastly more value than in orating upon the supposed necessity for federal regulation of the oil business.

That suggestion of a Federal Oil Commission like the Interstate Commerce Commission for the railroads is another half-baked idea served to and swallowed by the gullible.

The Interstate Commerce Commission not only fixes rates for the railroads to charge but rates that the public must pay. How many readers of those chain editorials want their gasoline prices regulated like the Interstate Commerce Commission has regulated railroad rates?

But, aside from that, how many thought of the constitutional and legal difficulties in the way of any such scheme? Nothing short of Sovietism could make it possible.

If a Federal Oil Commission to fix prices like the Interstate Commerce Commission fixing rates, why not one for coal, for iron ore, for copper, for every other natural resource?

But that is one of the great evils about this agitation for federal regulation of the oil industry. It is held out as so simple and so easy that the public believes it possible and with that support there is no telling what mischievious or dangerous attempt at regulation may be made.

And the popular mind is so inflamed that it will not consider the actual facts in the case. If it did it would take note of what the industry has accomplished through co-operation at Seminole and what it is doing to regulate itself in Pecos County and elsewhere.

If it did, when it sees the industry pictured as "joyriding on wanton overproduction," it would ask what sort of joyride the oil business could enjoy this year with crude prices cut in half and the gasoline market shot to pieces all through the height of the consuming season.

That is the sort of fact that does not get into cartoons in the chain newspapers which agitate for federal regulation of the oil business.

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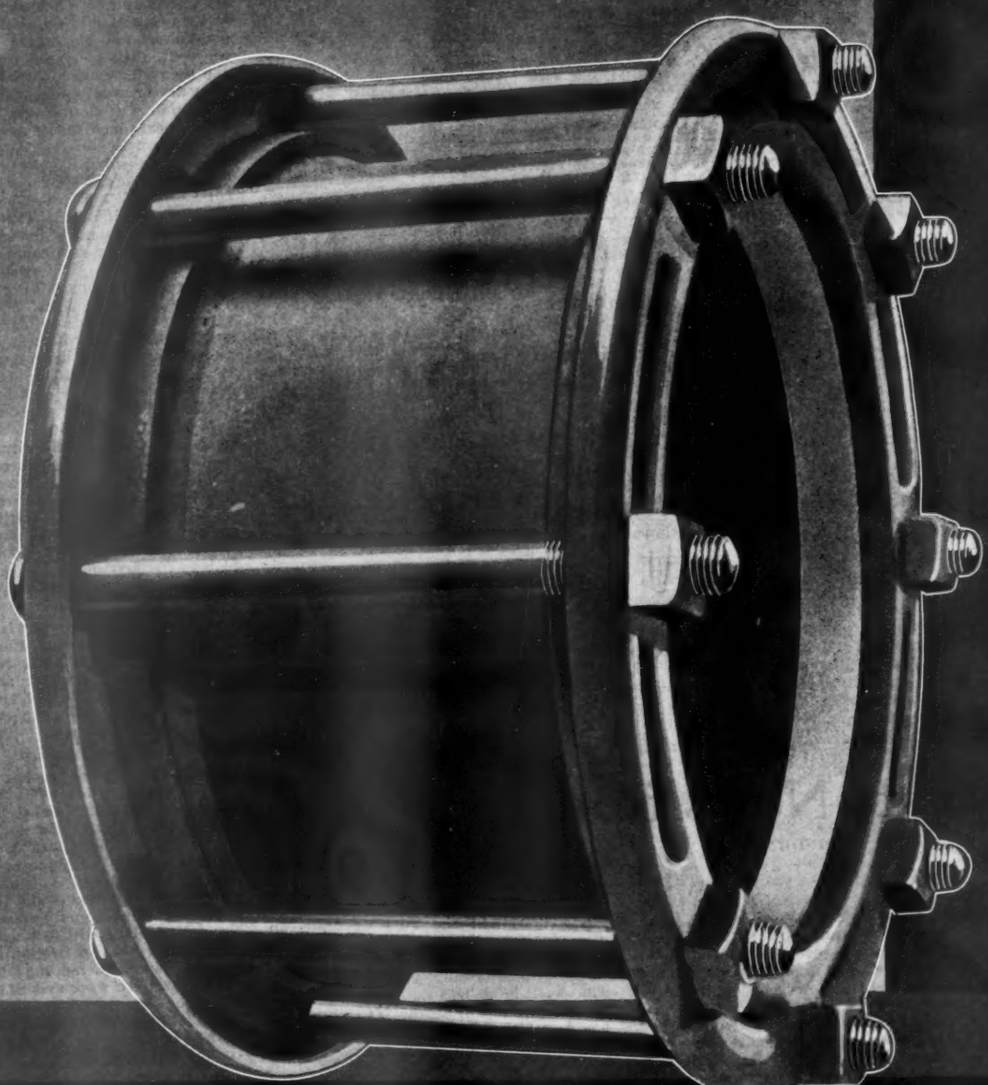


DRESSER COUPLINGS DOMINATE

West Texas Production at New Peak

Makes 186,889 bbls. With Most of Major Pools Partially Pinched In. Extension to Yates Pool; 28 New Locations

By C. D. Lockwood
Staff Correspondent, North and West Texas

FORT WORTH, Tex., Sept. 26.—Another extension of half a mile from the Yates Pool in Pecos County, a 4,000-bbl, well in the Church-Fields Pool of Crane County, and the announcement of 28 new locations in the West Texas district comprised the principal news of the week as production from this district broke all previous records, scoring a new high of 186,889 bbls. with most of the major pools partially pinched in.

NORTH CENTRAL TEXAS AND WEST TEXAS
Estimated Daily Production for Week Ending September 24, 1927

Ranger District—	Prod.
Brown County	24,622
Callahan County	4,800
Coleman County	1,205
Comanche County	1,461
Palo Pinto County	467
Ranger	9,165
Shackelford County	5,799
Stephens County	9,033
Total Ranger district	56,552
Wichita Falls District—	
Archer County	24,561
Baylor County	90
Clay County	554
Cooke County	6,134
Jack County	852
Montague County	10,561
Throckmorton County	1,426
Wichita County	29,123
Wilbarger County	11,332
Young County	13,569
Total Wichita Falls district	98,202
Total North Central Texas	154,754
West Texas District—	
Big Lake Field	24,177
Crane County	101,202
Crockett County	2,041
Ector County	0
Glasscock County	402
Howard County	3,139
Jones County	1,522
Loving County	30
Mitchell County	3,746
Pecos County	17,018
Scurry County	45
Upton County	23,003
Winkler County	10,574
Total West Texas	186,889
Grand total N. and W. Texas	341,643
Increase	7,829

This new peak in West Texas production resulted from the partial opening of several big producers in the Yates Pool belonging to the Mid-Kansas Oil & Gas Co. and Transcontinental Oil Co. With some of the back pressure released for four days during the week, the 12 producing wells owned by these concerns flowed a total of 104,660 bbls. in the six days from September 18 to 23, inclusive, although but half of the number were even partially opened, most of them remaining on five-sixteenths-inch chokes. Detailed gauges of these wells and the size of the openings through which they flowed on a typical day during the week are given elsewhere in this issue.

Extension Well

The extension well referred to is Simms Oil Co.'s No. 1 Smith, SW cor. Section 103, Block 194, about half a mile northwest of the McMan and Marland's No. 1 Yates which is the nearest producer. The Simms well found the first oil at 1,276 feet and had 200 feet of oil in the hole at 1,305-14 feet. The big pay was encountered at 1,340 feet and at total depth of 1,358 feet this well was flowing at the rate of 64 bbls. an hour. The tools were reported to have been lost in the hole. A last-minute report from the field, which could not be verified before this was written, stated that the well was flowing 160 bbls. an hour at total depth of 1,376 feet. Surface elevation is 2,596 feet.

Humble Oil & Refining Co.'s No. 1 Smith, in the NE cor. of Section 36, Block 194, a mile west of the McMan and Marland producer, and about a half-mile southwest of the Simms Oil Co.'s extension, was drilling at 1,304 feet in anhydrite and lime Monday, with the cuttings showing very little lime according to geological reports from the field. Surface elevation of this test is 2,727 feet. It topped a pay at 1,245 feet which put 30 feet of oil in the hole but has not yet reached the big pay. Several other tests are nearing the shallow pay levels and are due for completion shortly although they will probably have to be pinched in similar to those already completed.

Gulf Production Co.'s No. 1 Smith, 990 feet south of the NE cor. of Section 28, Block 194, which was reported last week as having extended the field, increased from 30 bbls. an hour to 75 bbls. an hour when deepened to 1,360 feet. The big pay was topped at 1,358 feet and the estimated initial output was 1,680 bbls. but the well was pinched in to 10 bbls. hourly. Corrected gravity is 30.3 degrees.

Water Not Extended

The water intrusion which created all of the excitement last week has not extended to any other wells outside of the three which were immediately affected. Gulf Production Co.'s No. 1 Thompson, in Section 71, Block 1, on the eastern edge of the field, was put back on production and at latest report was making about 500 bbls. of oil daily with 9 per cent sulphur water. When first affected it was flowing about 30 bbls. an hour, pinched in, and the water started at 20 per cent, then increased to 30 per cent, and the well was shut in completely while a separator was erected. One day last week this well flowed 385 bbls. through a one-fourth-inch choke against 400 lbs. back pressure, and the water content at the well measured 9.5 per cent.

Last Sunday, September 25, Marland Oil Co.'s No. 1 Yates-A just across the river from Gulf's No. 1 Thompson, flowed 675 bbls. through a five-sixteenths inch choke and the water content was 5 per cent. Last Friday this well was making 5 per cent water and 10 per cent b.s., according to field reports, but the gauges vary from time to time for obvious reasons, depending on how and where they are taken. On the same day, Allsman & Bell's No. 1 Pecos River Bed made 4 per cent water and 2 per cent b.s.

These are the only three wells affected by the water, in spite of many rumors to the contrary, and the situation doesn't appear to be getting worse very fast. While the presence of this water undoubtedly has caused a downward revision of estimates concerning the ultimate production of the Yates Pool, many observers feel that these estimates were merely too high in the first place, but that the Yates Pool is still destined to produce vast quantities of crude.

Roxana Petroleum Corp.'s No. 1 Tippett, SE cor. Section 102, Block 194, west offset to Simms Oil Co.'s No. 1 Smith, newest producer, has set and cemented 8-inch casing at 1,290 feet and will probably be one of the next two or three wells to reach the pay.

New Locations

Pecos County was responsible for four of the new locations this week. Day Brothers and McKnight's No. 1 I. G. Yates is located 150 feet out of the NW cor. of Section 58, Block 1, I. & G. N. Survey, about a mile due south of Marland Oil Co.'s No. 1 Yates-A and about a half-mile northwest of the Henshaw dry hole. Mid-Kansas and Transcontinental's No. 4 Yates-B is 470 feet north and 270 feet west of SE cor. Section 61, Block 1, and the cellar is being dug; No. 5 Yates-B is 1,092 feet west and 811 feet north of SE cor., same section, and No. 6 Yates-B is 1,343 feet north and 1,733 feet west of the SE cor. same section.

Winkler County

Winkler County is rapidly demanding its place in the spotlight now, in spite of Pecos County's spectacular bid for all of it. The Hendricks Pool in Winkler County has, alone, 58 locations, rigs, drilling wells and tests either shut down on the lime or cementing. Twelve of these are locations, 12 are rigs or rigging up; 17 are actually drilling; and 17 more are cementing 6-inch or 8-inch or are shut down after standardizing. Considering the fact that one producer in this field, Southern Crude Oil Purchasing Co.'s No. 1 T-88 Hendricks-B, in Section 4, Block B-12, averaged 5,406 bbls. daily during the past week, an increase over the previous week's performance, this field must

(Continued on Page 185)

WILDCAT OPERATIONS IN WEST TEXAS

Week ending September 24, 1927

Company, Farm and Location—	Remarks—
ANDREWS COUNTY	
Calvin & Bell's No. 1 Ratliff & Bedford, C NE, Sec. 18, Blk. A-54	Shut down for water 350 ft.
J. S. Cosden's No. 1 Ratliff & Bedford, C SE Sec. 8, Blk. 73, Public School Land	Drilling 765 ft.
Sartain Oil Co. et al's (was Deep Rock Oil Co.'s) No. 1 W. J. Harris, C SE Sec. 12, Blk. A-46, Public School land, elev. 3,167 ft.	Hole full fresh water 1,050 ft.; drilling 1,265 ft.
B. B. McKennon's (was Neff et al's) No. 1 J. S. Means, C SE Sec. 12, Blk. A-35, Public School Land	Shut down 1,020 ft. for 10-in. casing.
A. G. Carter & Zweifel's No. 1 Cowden, C SE Sec. 18, Blk. A-52, Public School Land Sur., elev. 3,156 ft.	Top salt 1,375 ft.; encountered pocket of air 3,635 ft.; S. D. 4,095 ft.
BREWSTER COUNTY	
Mid-Kansas O. & G. Co.'s No. 1 Turney, Sec. 77, Blk. 213, T. & St. L. Sur.	Shut down 225 ft.
Reese & White's No. 1 Kimbale, C NE Sec. 204, Blk. 9, G. H. & S. A. Sur.	Location.
Van McPhail's No. 1 McIntyre, SE cor. Sec. 59, Blk. 353, 7 mi. S of Alpine	Shut down for bailer 1,025 ft.
Wilcox & Anderson's No. 1 Gage, Sec. 8, Blk. 300, T. C. R. R. Sur.	Shut down for 8-in. 1,000 ft.
COKE COUNTY	
W. H. Brown et al's No. 1 W. L. Foster, SE cor. Sec. 142, Blk. 2, H. & T. C. Sur., elev. 2,222 ft.	Drilling 2,010 ft.
Danciger O. & R. Co.'s No. 1 Mrs. Byrnes, Clinton Sur.	Drilling 2,240 ft.
Lipan Oil Co.'s No. 1 S. M. Conner, Sec. 71, Blk. 2, H. & T. C. Sur.	Shut down 1,215 ft.
Lipan Oil Co.'s No. 1 E. C. Rawlings, Sec. 290, Blk. 1-A, H. & T. C. Sur., elev. 2,750 ft.	Cementing 6-in. 2,736 ft. total depth (was abandoned last April).
CONCHO COUNTY	
The Exploration Co.'s No. 1 Hartgrove, Blk. 340, J. Schouch Sur., elev. 1,718 ft.	Junked hole 1,670 ft. (corrected depth); skidded machine 25 ft. north; drilling 110 ft.
CRANE COUNTY	
Marland Oil Co.'s No. 1 Union Land, E cor. of W ½ Sec. 28, Blk. 35, H. & T. C. Sur., elev. 2,298 ft.	Top salt 825 ft.; drilling 1,080 ft.
Duffey & Gault & Brown's No. 1 Cowden	New location.
CROCKETT COUNTY	
George Anderson and Marland Oil Co.'s No. 1 University	Hole full sulphur water 1,800 ft.; one-half bailer oil 2,240 ft.; one-half bailer sulphur water per hour 2,475 ft.; shut down 2,475 ft. in lime.
V. T. Bolin & Co.'s No. 1 P. C. Coates, NW cor. SW Sec. 4, Blk. 2, I. & G. N. Sur.	Shut down 2,110 ft.
Corbett & Gill's No. 1 Todd	Shut down 830 ft.
Corbett & Gill's No. 1 University	Drilling 715 ft.
J. S. Cosden, Inc., No. 1 Paul Perner, SW cor. Sec. 36, Blk. 2, I. & G. N. Sur.	Location.
Gulf Production Co.'s No. 2 Powell-D	Top salt 1,060 ft.; drilling out boulder 2,345 ft.

(Continued on Page 129)

Late News from the Fields

CALIFORNIA

LOS ANGELES, Calif., Sept. 27.—The Pan American's No. 1 State, in the ocean front at Seacliff in Ventura County, west of Ventura Avenue Field, looks like an almost sure shot to open up another new field soon as core samples from 2,600 feet show good saturated oil sand.

Pacific Eastern Production Co. has started deepening its Union Avenue wildcat at Bakersfield following failure to get production on account of probable mudding off formation resulting from use of mud to control gas.

NORTH LOUISIANA-ARKANSAS

SHREVEPORT, La., Sept. 27.—Ohio Oil Co.'s No. 2 Crain, Section 1-17-14, eastern Union County, Arkansas, wildcat, blew in late Monday from a formation at 3,015-20 feet. It flowed 30 bbls. of cut oil the first 30 minutes with an estimated 4,000,000 feet of gas. It then started to blow salt water and in the first hour made 180 bbls. of fluid of which 10 to 12 per cent was salt water. Tuesday afternoon it was blowing at the rate of 5,000 bbls. of fluid of which 2 per cent was cut oil. After the water settled the oil showed up about 8 to 12 per cent of salt water. Attempts to shut the well caused the fluid to come up around the casing which leads to the belief that the casing seat has given way. The 6⅝-inch casing is at 3,000 feet. The well is a half mile southwest of the same company's No. 1 Crain which has been pumping from 45 to 50 bbls. of 35.3 gravity oil since June. The oil in No. 2 Crain tests 26.8 gravity.

Moody & Seagraves' No. 1 Hemler, Section 20-16-6, East Richland Parish, Louisiana, has been completed making an estimated 18,000,000 feet of gas from sand at 2,407-18 feet.

WEST TEXAS

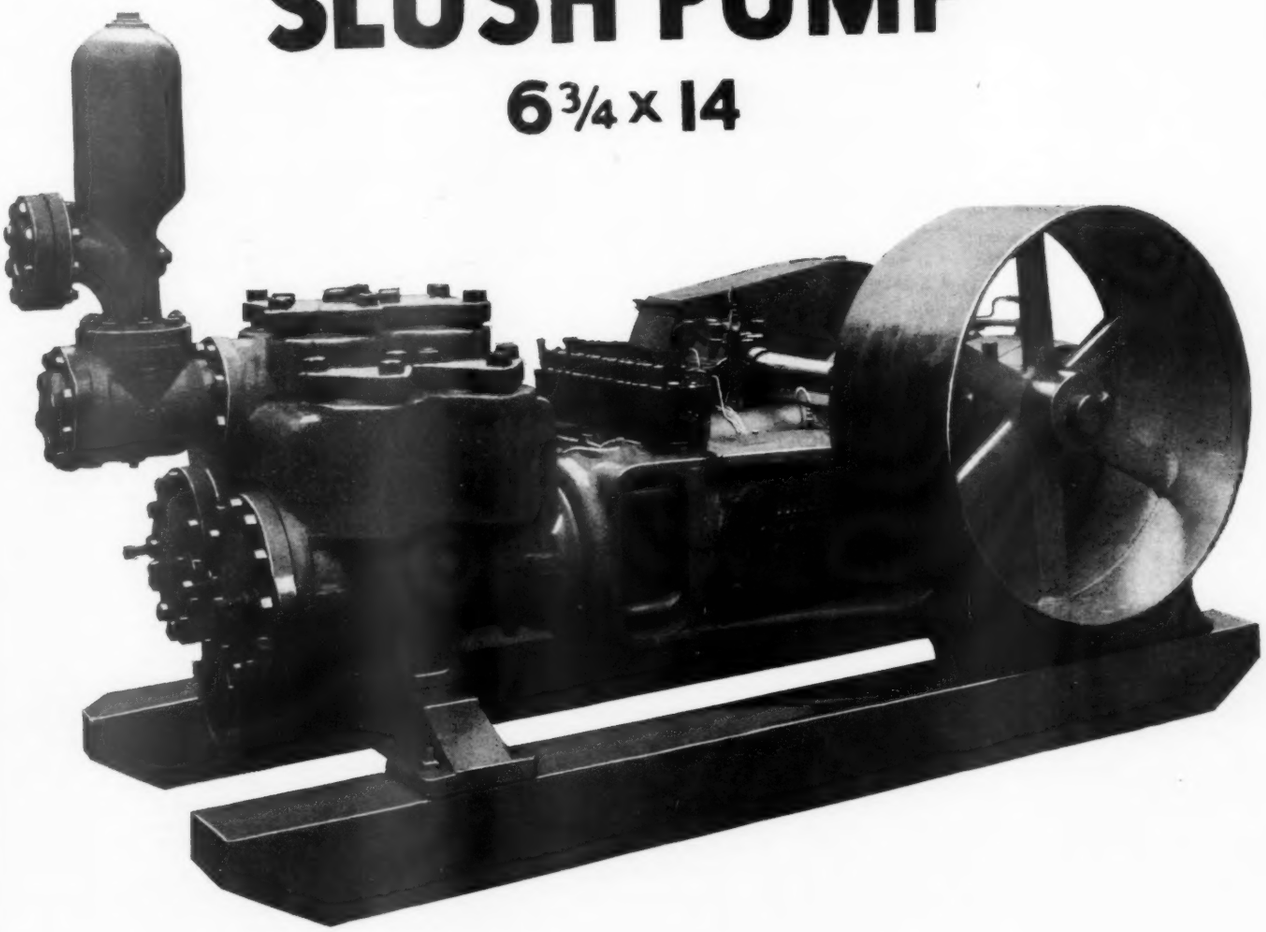
FORT WORTH, Tex., Sept. 27.—Lou Ladd and others' No. 1 McMillan in Runnels County was put on the pump at 9 o'clock last night and in 9 hours up to 6 o'clock this morning pumped 98 bbls. Total depth has been revised by owners to 2,532 feet, formerly being thought 2,545 feet. This well came in

(Continued on Page 188)

IDEAL

POWER DRIVEN SLUSH PUMP

6¾ x 14



THE NATIONAL SUPPLY COMPANIES

Panhandle Output Drops 4,020 Barrels

Gas Showing in Sherman County Test. Eight New Locations. Withdrawal 14,000 bbls. in Excess of Production

By James H. Dameron
Staff Correspondent, Texas Panhandle Fields

AMARILLO, Tex., Sept. 26.—A 4,020-bbl. drop in production featured the Texas Panhandle during the past week although there were five new oil wells on the list. The production is now down to 93,455 bbls. daily, or about what it was during the week of August 14, 1926. The average per well, however, is only a fraction of what it was then because 1,362 wells contributed toward this week's total while the number of producers in the Panhandle last August 14 was just slightly in excess of 300.

A showing of gas in Sherman County and the announcement of eight new locations were the other interesting Panhandle features this week. Hagy & Harrington and Marland Oil Co.'s No. 1 S. F. Flores, located in the C SW Section 64, Block 3-T, T. & N. O. Survey, Sherman County, about 8 miles due north of the Morton well on the Reeder land in Moore County, picked up about 500,000 feet of gas at 3,048-50 feet in lime and at latest report was drilling ahead at 3,070 feet. This test is being watched with considerable interest because it topped the lime at a favorable depth. It has a surface elevation of 3,467 feet and it found the top of the lime at 2,562 feet or 905 feet above sea level. It will soon be getting down to the critical depths if luck is favorable and no accidents delay it.

Nothing new developed at the Oldham County wildcat during the week. Prairie Oil & Gas Co.'s No. 1 Landergin is the name of the well which caused mild excitement last week when it found a showing of oil, the first in Oldham County. Six-inch casing was run and cemented at 4,455 feet but early this week no report of a test of the showing had been made. Bottom of the hole is 4,518 feet.

There were eight new locations in the Panhandle this week; 16 old locations carried over; 3 rigs building; 3 rigs standing; 5 rigging up; 95 wells drilling; 76 wells shut down; and 11 completions, a total of 222 operations. There were 68 wildcats in the Panhandle.

During the week ending September 20, 71,000 bbls. of oil were run through the three pipe lines from the Panhandle. The oil run to local refineries amounted to 13,000 bbls. and tank car shipments were 24,000 bbls., a total of 108,000 bbls. daily. This was about 14,000 bbls. daily in excess of production, or in other words, about 14,000 bbls. daily were drawn from stocks. Stocks of crude in the Panhandle at the end of last week were 18,591,000 bbls.

TEXAS PANHANDLE

Production of Major Companies for Week Ending September 24, 1927

Hutchinson County

Company—	Wells	Bbls.	Aver.
Amerada Pet. Corp.	10	529	52.9
Derby Oil Co.	11	711	64.7
Dixon Creek Oil	43	4,693	109.6
Empire G. & F.	26	1,137	43.8
Gulf Prod. Co.	98	7,051	72.0
Hughes, J. K., Dev.	22	850	38.6
Marland Oil Co.	56	2,177	38.8
McMan O. & G. Co.	25	1,517	60.6
Midwest Exp. Co.	25	2,318	92.7
Pantex	9	716	75.5
Phillips Pet. Co.	241	20,667	85.7
Prairie & Phillips	73	3,835	52.5
Prairie O. & G. Co.	9	323	37.0
Prairie et al	9	986	109.5
Pure Oil Co.	5	671	134.2
Roxana Pet. Corp.	10	4,532	453.2
Skelly Oil Co.	29	1,088	37.5
The Texas Company	2	137	68.5
White Eagle O. & R.	24	1,026	42.7
Total	726	54,964	
All others	276	19,046	
Grand total	1,002	74,010	

Carson County

Empire G. & F.	9	722	80.2
Gulf Prod. Co.	21	394	19.0
Magnolia Pet. Co.	3	247	92.3
Marland Oil Co.	23	1,004	43.6
McMan O. & G. Co.	11	538	49.0
Prairie O. & G. Co.	10	1,275	127.5
Roxana Pet. Corp.	15	849	56.6
Skelly Oil Co.	10	1,516	151.6
The Texas Company	18	390	21.6
Total	122	6,931	
All others	38	1,764	
Grand total	160	8,695	

Gray County

Empire G. & F. Co.	8	552	69.0
Gulf Prod. Co.	16	1,629	100.2
Humble O. & R. Co.	13	512	39.4
Magnolia Pet. Co.	20	335	16.7
McMan O. & G. Co.	10	433	43.3
Marland Oil Co.	1	36	36.0
Phillips Pet. Co.	7	483	69.0
Prairie et al	19	1,480	78.0
Pure Oil Co.	9	421	46.7
Roxana Pet. Corp.	4	527	132.0
The Texas Company	8	323	40.3
Wilcox-Pama Oil	29	1,854	64.0
Total	144	8,585	
All others	16	775	
Grand total	160	9,360	

TEXAS PANHANDLE COMPLETIONS

Carson County

W. A. Gamble & Co.'s No. 1 John Dies, Lot 7, Block 11, Panhandle townsite, in Section 69, Block 2, T. T. R. R. Survey, was temporarily abandoned at 1,340 feet.

Gray County

Delaney and others' No. 1 Jackson, NW cor. E half, SW, Section 88, Block B-2, was estimated good for 250 bbls. from granite wash pay at 2,844-68 feet. Gulf Production Co.'s No. 1 J. B. Bowers-A, Section 89, Block B-2, flowed 2,008 bbls. at total depth of 3,003 feet in pay topped at 2,990 feet, and at latest report was flowing 63 bbls. an hour. It was completed. Majestic Production Co.'s No. 6 Bowers, Section 88, swabbed 120 bbls. at 3,078 feet and was still drilling.

Midwest Exploration Co.'s No. 1 Hood, SE cor. SW, Section 33, Block 3, was shot with 180 quarts at 2,953-87 feet, total depth 3,044 feet, and as a result swabbed 107 bbls.

Pollard and others' No. 1 Bowers, Section 19, made 130 bbls. after a 220-quart shot at 3,012-3,140 feet, total depth 3,208 feet.

Purple Sage Oil Co.'s No. 1 Johnson, in Section 8, Rockwall County School Land, was abandoned as a failure at 3,208 feet.

Hutchinson County

Amarillo Oil Co.'s No. 1 Ida Ingerton, Section 41, Block 47, H. & T. C. Survey, was plugged back from 3,090 to 3,025 feet and was completed as a 70,000,000-foot gasser at 2,535-2,605 feet. Same company's No. 6 Lee Bivins-B, Section 90, Block 46, H. & T. C. Survey, was completed for 77,000,000 feet of gas at total depth of 2,635 feet. First gas was found in this well at 2,175 feet.

Great Plains Oil Co.'s No. 1 W. L. Kingsland, Section 4, Block Y, was temporarily abandoned at 2,400 feet. The rig for Lane and others' No. 1 E. Cockrell was temporarily abandoned.

Roxana Petroleum Corp.'s No. 1 J. M. Sanford in Section 85, Block 46, produced 285 bbls. natural at 3,008-28 feet and was completed in this condition although it will probably be shot later. Wells and others' No. 1 E. Cockrell was shut in for 15,000,000 feet of gas at 2,780-2,848 feet. It had a small showing of oil at 3,108-09 feet, and was bottomed at 3,110 feet.

Moore County

Moore County Oil Co.'s No. 1 Sneed, Jr., was plugged back from 3,351 feet to 3,168 feet and completed for 12,000,000 feet of gas at 2,705-71 feet.

Wheeler County

Lyons and others' No. 1 J. H. Jackson, Section 11, Block 27, swabbed 100 bbls. at 2,290-2,300 feet and was shut down for storage.

Production by Counties

Following is a recapitulation of this week's production by counties:

County—	Wells	Bbls.
Carson	160	8,695
Gray	160	9,360
Hutchinson	1,002	74,010
Moore	3	0
Potter	1	35
Wheeler	36	1,355
Totals	1,362	93,455

Five of the new Panhandle locations were made in Hutchinson County in the vicinity of the Roxana Petroleum Corp.'s No. 1 E. Cockrell, which was reported last week as flowing better than 8,500 bbls. daily. It has since been holding up in good shape.

Roxana Petroleum Corp.'s No. 2 E. Cockrell is located 200 feet from the south line and 938 feet from the east line of the north half SE of Section 3, Block B-3, D. & S. E. Survey; No. 3 is located 200 feet from the south line and 330 feet from the east line of the same tract. These wells are located on the same lease as the big gusher.

The Texas Company's No. 1 E. Cockrell-B is 1,150 feet from the south line and 330 feet from the west line of Section 3, Block 23, B. S. & F. Survey. The Texas Company owns the north 155 acres of the south 235 acres of the SW in this section and Marland Oil Co. owns the south 80-acre strip.

Prairie Oil & Gas Co.'s No. 1 Burnett is a new location in the NW cor. W half, NW, Section 120, Block 4, I. & G. N. Survey, also in Hutchinson County. White & Lane's No. 2 E. Cockrell is 230 feet from the south line and 330 feet from the east line of the N half, SW, Section 3, Block 3, D. & S. E. Survey, a direct west offset to Roxana Petroleum Corp.'s No. 1 E. Cockrell. It is rigging up rotary.

There were two new locations in Carson County. Empire Gas & Fuel Co.'s No. 4 Burnett is in the C NW of Section 45, Block 5, I. & G. N. Survey, and is rigging up. Same company's No. 5 Burnett, C NE of Section 63, Block 5, is also rigging up.

In Gray County The Texas Company's No. 1 A. Chapman is located 990 feet from the west line and 330 feet from the north line of the NW of Section 51, Block 25, H. & G. N. Survey.

In Hale and King Counties

Two prospective oil areas which were at one time looked upon with considerable favor have so far failed to come up to expectations. These are Hale County and King County. Nothing new has developed during the past week in either area, but three of the five King County tests which were started as a co-operative venture by five large companies have been abandoned and the other two are close to contract depth with nothing much to show for their trouble. Phillips Petroleum Co., Sinclair Oil & Gas Co. and Gibson & Johnson have finished their contracts below 3,500 feet. Midwest Exploration Co.'s No. 1 Patton is below 3,003 feet and White Eagle Oil & Refining Co.'s No. 1 Burnett estate is shut down for 5-inch casing at 3,440 feet. The California Co.'s No. 1 Spike Ranch is also drilling below 3,360 feet.

In Hartley County, Deep Rock Oil Co.'s No. 1 Lyman & Balfour in Section 9, Block 2, G. & M. Survey, had a showing of water at 3,930 feet.

It is estimated that the Lone Star Gas Co. and the Upham Gas Co. are taking 50,000,000 feet of gas daily from Wheeler County.

WILDCAT OPERATIONS IN PANHANDLE

Week Ending September 24, 1927

ARMSTRONG COUNTY

Company, Well, Farm Name, Section and Block— Remarks—

Meadows et al's No. 1 E. D. Harrell, C Sec. 100, Blk. A-6, A. & G. Sur. ..... S.R., 4,100 ft.

United Oil & Trust Co.'s No. 1 J. P. Reck, Sec. 162, Blk. 4, H. & G. N. Sur. ..... Spudded and temp. abd., 298 ft.

BAILEY COUNTY

Humble Oil & Refining Co.'s No. 1 W. H. Fuqua, cen. E. half Sec. 117, Blk. A, Melvin, Blum & Blum. Sur. ..... Drlg., 420 ft.

BRISCOE COUNTY

C. S. Rice's No. 1 J. C. Anderson, SE cor. NW NW, Sec. 32, Blk. B-3, B. S. & F. Sur. ..... S.D., 1,620 ft.

CARSON COUNTY

Amatex Dev. Co.'s No. 1 E. S. Polling, Sec. 32, Blk. 2-Y. ..... Fish., 2,110 ft.

Empire G. & F. Co.'s No. 2 Burnett Estate, Sec. 33, Blk. 5, I. & G. N. Sur. ..... Drlg., 2,540 ft; first gas, 2,440 ft; 10,000,000 ft. gas, 2,520 ft.

Empire G. & F. Co.'s No. 3 Burnett Estate, Sec. 44, Blk. 5, I. & G. N. Sur. ..... Drlg., 2,650 ft; 18,000,000 ft. gas, 2,585 ft.

Empire G. & F. Co.'s No. 9 Burnett Estate, Sec. 50, Blk. 5, I. & G. N. Sur. ..... Drlg., 2,424 ft; 3,000,000 ft. gas, 2,285 ft; 24,000,000 ft. gas, 2,400 ft.

Empire G. & F. Co.'s No. 10 Burnett Estate, Sec. 53, Blk. 5, I. & G. N. Sur. ..... S.D., 2,642 ft; 23,000,000 ft. gas.

Marston Oil Co.'s No. 1 J. L. Noel ..... S.D., 3,064 ft.

Navajo Oil Co.'s No. 1 E. S. Polling, Sec. 22, Blk. 2-Y ..... Set 6-in. 3,496 ft; fish., 3,712 ft.

Panhandle Northern Oil Co., Sec. 62, Blk. 2, T. T. R. R. Sur. ..... Cellar.

Stubblefield et al's No. 1 E. Cooper, SW cor. NE Sec. 5, Blk. 9, I. & G. N. Sur. ..... U.R. 6-in., 2,450 ft; drlg., 3,000 ft.

Vitek Oil Co.'s No. 1 J. H. Eller, NE cor. NW Sec. 300, Blk. 3 ..... S.D., 900 ft.

Willis et al's No. 1 Burnett Estate ..... Rotary; drlg., 850 ft.

CASTRO COUNTY

Colorado O. & R. Co.'s No. 1 M. Siemmons, SW cor. Sec. 78, Blk. M-17, B. S. & F. Sur. ..... Rig blown down.

Mystery Oil Co.'s No. 1 J. I. Crum, SE cor. NE Sec. 333, Blk. M-6, S. K. & K. Sur. ..... S.D., 510 ft. for casing.

CHILDRESS COUNTY

Brookins et al's No. 1 Mrs. Givens, 660 ft N and W of SE cor. Sec. 676, W. & M. W. Sur. ..... Spudded and S.D.

Continental Oil Co.'s No. 1 B. P. Smith, C NE, Sec. 14, Blk. 9 ..... T.D., 2,450 ft; 1 bail. water per hr.

Hoover & Calloway's No. 1 O. L. Tucker, Sec. 736, Haggard Sur. ..... Spudded and S.D.

C. L. Sloane et al's No. 1 B. P. Smith, Sur. 49, F. P. Knott lands ..... Set 6-in. pipe at 2,902 ft; S.D., 3,000 ft.

COTTLE COUNTY

Exploration Co.'s No. 1 Richards ..... Spudded and S.D.

DALLAM COUNTY

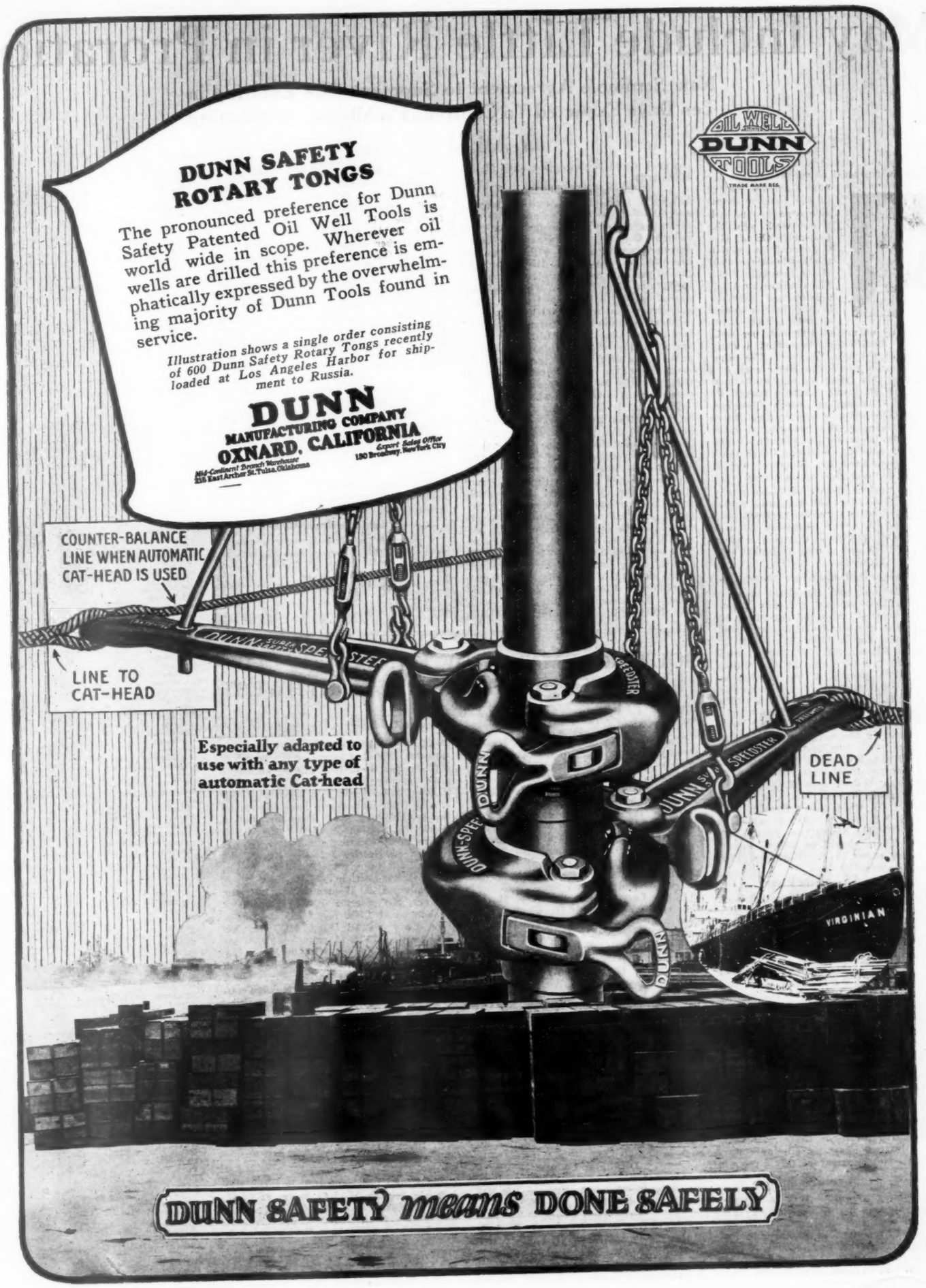
James et al's No. 1 fee, Sec. 9, 47½ ..... S.D., 2,870 ft; temp. abd.

Wood Bros. et al's No. 1 Capitol Synd., Sec. 19, Blk. 17. 6-in. 3,375 ft; deepening 3,690 ft.

Marland Oil Co.'s No. 1 A. M. James, C SW W half, Sec. 21, S. H. McElreath Sur. ..... Drlg., 1,660 ft.

Marland Oil Co. et al's No. 1 Capitol Synd., Sec. 24 Blk. 18, Capitol Synd. land ..... Drlg., 2,190 ft.

(Continued on Page 163)


DUNN SAFETY
ROTARY TONGS
The pronounced preference for Dunn Safety Patented Oil Well Tools is world wide in scope. Wherever oil wells are drilled this preference is emphatically expressed by the overwhelming majority of Dunn Tools found in service.
Illustration shows a single order consisting of 600 Dunn Safety Rotary Tongs recently loaded at Los Angeles Harbor for shipment to Russia.
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COUNTER-BALANCE LINE WHEN AUTOMATIC CAT-HEAD IS USED
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Especially adapted to use with any type of automatic Cat-head
DEAD LINE
DUNN-SPEE
DUNN
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May Include Little River in Proration

New Seminole Agreement to Supplant One Expiring in Ten Days Expected To Continue Prohibition of Shooting

By J. L. Dwyer
Staff Correspondent, Oklahoma Fields

A week of citations, injunctions and orders in the legal skirmishes which are now a general matter in the Greater Seminole area has passed.

One week ago, the Blackwell Oil & Gas Co. opened its wells in the Little River Pool of the Seminole Field. The Corporation Commission had previously modified its original order which allowed a daily output of 100 bbls. per well, and the modification permitted a daily yield of 1,000 bbls. per well. The other companies in the Little River area had abided by this ruling for two weeks, and when the Blackwell company opened its wells, the owners of leases adjoining, opened their wells to protect their leases against drainage. This performance made the Little River Pool touch the 40,000-bbl. mark, and the Oklahoma Corporation Commission cited the Blackwell Oil & Gas Co. for contempt of its orders.

After various legal skirmishes and gestures, the Blackwell company agreed to again shut in its wells to 1,000 bbls. daily, and the other companies followed suit. The production of this pool is again under control and holding at 14,000 bbls. from the 14 wells.

Bowlegs and Earlsboro Steady

The Bowlegs and Earlsboro pools of the field have showed a steady output during the week, with one important dry hole in the north end of the latter pool. The Empire Gas & Fuel Co.'s No. 6 Edmundson, SE cor. NE SW, Section 3-9-5, is a hole full of water in the Wilcox sand, and this cuts off any further extensions of the sand in this direction. This well had the Sylvan shale 4,230 feet, and the Viola lime 4,323 feet with the Wilcox sand 4,398-4,432 feet with salt water. In the northeast side of the Earlsboro Pool, the Barnsdall Oil Co.'s No. 1 Ingram, SW cor. NW SW, Section 1-9-5, flowed 1,900 bbls. the first 24 hours from Wilcox sand 4,412-26 feet. Another good well in this area is the Barnsdall Oil Co.'s No. 1 Bruner, NW cor. NE NE. Section 10-9-5, which is flowing 115 bbls. hourly from sand 4,269-79 feet. There should be several important completions in the Earlsboro Pool during the next 10 days.

Dry Hole in Little River

A dry hole in the Little River district, and a well running very low geologically makes that pool look more limited in area. The Barnsdall Oil Co.'s No. 1 Davis, SE cor. NW, Section 2-7-6, found a hole full of water in the Wilcox sand 4,330-85 feet. According to reports this depth places the Wilcox sand about 225 feet low in this well, and makes the extreme southwest part of the pool look very doubtful as far as prospects of production are concerned. The Twin State Oil Co.'s No. 1 Hyde, SE cor. NE SW, Section 2-7-6, is reported to be running very much lower than the Barnsdall well, and is drilling in the Viola lime at 4,350 feet. This well topped the Viola at 4,325 feet. The Barnsdall well and the Twin State well at this time constitute the west line of drilling activity, and the disappointing results in the former well, will at least temporarily eliminate any more rigs and locations in this direction from the pool.

The Seminole City Pool in Township 9-6 is holding its output very consistently, and apparently the decrease in this pool has been checked for the time being. It has remained at 73,000 bbls. for the last few weeks, and those who had given much study to the future drop of this pool believed that by this time the pool would be down to around 50,000 bbls. daily.

Proration Expiration

Within 10 days, the time set for the expiration of the Seminole operators proration agreement will expire, and it is thought that any new arrangements or agreements entered into will include the proration of the Little River Pool in the 10 per cent reduction plan which was formulated some time ago when the companies agreed to hold the Greater Seminole production to 450,000 bbls. daily.

There are numerous arguments for and against this plan by the Little River operators and by the operators in the other pools of the field, but an agreement fashioned after the 10 per cent reduction will probably be reached, although the percentage is problematical.

If the Little River wells are permitted to flow within 10 per cent of their capacity, and the wells in the remaining pools of the field are also restricted to 85 or 90 per cent of their potential production, the local crude market may be expected to rock along with little chance of disturbance, but should the Seminole proration agreement be abruptly terminated, and all wells be thrown widely open, and the torpedo wagon again permitted to enter the field, little chance, some operators say, would remain for the present crude price structure to endure.

The shooting of the wells in the Greater Seminole Field would by itself increase the present output of the pools over 100,000 bbls. temporarily at least, and it is the wish of the majority of operating concerns to avoid this. It is very likely that any new agreements will continue to exclude the torpedo wagon from the field, with the hope of continuing a stable crude price situation.

Garber Deep Sand Operation

In the Garber Field, another deep sand operation is in progress. The Skelly Oil Co.'s No. 1 James, SE cor. NW, Section 19-23-3w, is making 28 bbls. an hour from the Wilcox sand found 5,468-70 feet. This well is a diagonal offset to the Marland Oil Co.'s No. 1 Garber, which opened this side of the Garber Pool when it found the Wilcox at this depth. Another instance of the dips and raises of Wilcox formation is given in this operation. In the Garber Field the original Wilcox sand development found that stratum at a depth of 4,400 feet. The new activity is some 1,100 feet deeper than this.

Ramsey Brothers have a rig on the ground for a wildcat well in Logan County. It is No. 1 Stephens, NE cor. SW, Section 33-18-4w.

The Garber deep sand production averaged 7,733 bbls. from 134 wells for the week ending September 23.

Seminole Production

Production of the Greater Seminole area for Friday, September 23, was as follows:

Little River

Company and Well—	Wells	Prod.
Amerada:		
Nitey	1	0
Blackwell:		
Nitey	3	9,527
Indian Terr. Illum.:		
Dungan	1	2,684
House, M. A.	1	3,827
House, W. E.	1	839
Jackson	1	2,964
Nitey	2	8,537
Reed	1	1,358
Mid-Continent:		
Wadsworth	2	3,000
Prairie:		
Dugan	1	3,162
Total	14	35,898

Bowlegs

Amerada:		
Rasco	3	6,525
Atlantic:		
Baker	4	1,846
Fleet	4	1,572
Grayson	2	2,527
Jones, C.	3	195
Atlantic & Denver:		
Jones, A.	3	1,454
Barnsdall:		
McNac	1	50
Murrow	4	2,249
Carter:		
Bowlegs	3	2,365
Burden	1	375
Harjoche	6	2,090
Hilly	1	1,535
McGelsey	1	0
Walker	2	985
Wise	10	8,710
L. Jones	1	110
Empire:		
Lacy	6	1,334
Wise	2	2,070
Gypsy:		
Bowlegs	1	600
Brown	1	100
Cumsey	4	1,365
Grayson	2	1,507
Walker	8	3,992
Wise	2	27
Independent-Marland:		
Coker	1	425
Indian Terr. Illum.:		
Barnett	2	1,146
Billington	3	1,227
Bowlegs	8	3,751
Davis	3	1,547
Fay	3	2,376
Goforth	10	3,035
Livingston	11	9,693
Lizzie	2	732
Walker	8	2,663
Wilmont	4	2,579
Work	1	694
Youngblood	4	872
McColloch:		
Bowlegs	3	420
Mid-Continent:		
Baker	4	4,193
Bowlegs	1	935
Hutke	1	5
Minnehoma:		
Bowlegs	4	1,679
Prairie:		
Gahagan	3	1,810
Harber	7	4,095
Jones	1	1,440
N. Templeton	1	2,985
Whitney	4	455
Pure:		
Reed	16	10,583
Strothers "D"	2	1,172
Strothers "E"	1	10
Strothers "F"	1	642
Roxana & Houston:		
Taylor	6	2,360
Shaffer:		
Lacy	3	872
Sinclair:		
Adam	1	0
Bowlegs	1	115
Cumsey	1	3,299
Ellen	4	4,070
Harjo	3	2,390
Jones	4	7,730
Taylor	4	3,866
Walker	4	1,810
Texas:		
Reed	7	6,630
Tidal:		
Harjoche	3	1,455
Twin State:		
Grayson	4	2,320
Jones	1	535
Total	236	142,199

Earlsboro

Amerada:		
Anderson	4	3,250
Cowden	4	1,545
Rodgers	2	5,665
Barnsdall:		
Brown	3	4,723
Bruner, F.	1	0
Cudjo, C.	1	30
Davis, D.	3	2,324
Davis, J.	2	308
Davis, M.	3	2,072
Gibson	6	4,945
Hearn	1	25
Hooley	1	0
Ingram	1	2,520
Pack	4	1,771
Peter	4	538
Sango	1	134
Sebolka	1	2,570
Sullivan, H.	1	6
Sullivan-Harjo	2	1,615
Smith	2	78
Wasutke	3	2,341
Carter:		
Payne	2	2,825
Sango	2	395
Continental:		
Spencer	3	6,935
Crosbie:		
Bryant	2	2,435

SOUTH GORMAN POOL, KANSAS EXTENDED HALF MILE NORTHWEST

By J. L. Dwyer
Staff Correspondent, Kansas Fields

The South Gorham Pool in Russell County, Kansas, was extended over a half mile to the northeast by a well of Keys Petroleum Co. The new well is No. 1 Baxter, SW cor. SE SE, Section 32-13-15, and it is now estimated at 100 bbls. daily in the Oswald lime drilled from 3,040-80 feet.

In the Oxford townsite development, the Roxana Petroleum Corp.'s No. 2 Community, in Block 39, swabbed 125 bbls. the first 12 hours after a shot of 20 quarts in sand 2,127-35 feet.

In the Lost Springs district of Marion County the new well of Harwood & Winters was deepened with little improvement. This is No. 1 Ucker, in Section 3-17-4, which is 3 miles northeast of the present limits of the pool.

Butler County

Branson and others' No. 3 Doughty, CSL NE SW Section 5-27-6, is a rig up. Basom and others' No. 1 Cannon, NW cor. NE Section 2-26-7, is dry and abandoned at 2,744 feet.

Clark County

Watchorn Oil & Gas Co.'s No. 1 Stephens, NW cor. NE NW Section 21-32-1w, is a dry hole at 4,290 feet.

Cowley County

Ferguson and others' No. 1 Ferguson, SE cor. SW Section 28-30-8, is dry and abandoned at 3,425 feet. Roth & Faurot's No. 1 Sowden, SW cor. NW Section 36-33-4, is dry at 3,604 feet.

Dickinson County

Harwood, Winters and others made location for No. 1 Uteck, SW cor. SE NW Section 35-16-4.

Greenwood County

Empire Gas & Fuel Co.'s No. 3 Fankhouser rig is up in the SE cor. SW SE Section 24-22-12. McCullouch and others have the rig on the ground for No. 1 Fankhouser, SW cor. NW NW Section 29-22-13. Rogers and others made location for No. 1 Lamont, SW cor. NW NW Section 30-22-13. Christy and others have the machine at the location for No. 2 Dennis, NW cor. SW Section 31-24-13. Murphy and others have the rig on the ground for No. 1 Townsite, Lot 5, Block 53, Section 34-25-10. Cross and others made location for No. 1 Brown, NE cor. SE Section 1-25-13. Rogers and others built the rig for No. 1 Stith, Lot 9, Block 44, Section 3-26-10.

Henderson & Holden's No. 1 Peese, SE cor. SW Section 10-22-11, has been abandoned at 1,930 feet. Empire Gas & Fuel Co.'s No. 16 Duby, NW cor. NE NW Section 23-22-11, was completed for 200 bbls. in sand at 1,868-96 feet. No. 2 Fankhouser, NW cor. SW SE Section 24-22-12, is dry and abandoned at 2,222 feet. Polhamus and others' No. 1 Teter, NE cor. SW Section 26-24-9, is making 20 bbls. from sand at 2,122-36 feet. Cross and others' No. 2 Hoover, CNL NE SE Section 36-24-12, made 100 bbls. after being shot with 120 quarts in sand at 1,572-1,631 feet. Roth & Faurot's No. 3 Welch, NE cor. NW NE Section 13-25-8, is making 25 bbls. from sand at 2,376-94 feet. Rogers & Ballard's No. 1 Wiggins, SE cor. Section 34-25-10, came in for 75 bbls. in sand at 1,964-79 feet. Murphy and others' No. 1 Hoover, C NE, Block 14, Section 2-26-10, is a 35-bbl. well in sand at 1,971-82 feet.

Osage County

Stark and others' No. 1 Barnett, SE cor. SW Section 33-17-14, is dry at 1,847 feet. McBride and others' No. 1 Jenkins, C SE SW Section 30-17-15, has been abandoned at 2,204 feet.

Sumner County

Davis & Hazlett's rig is on the ground for No. 1 Bussard, SE cor. Section 35-

(Continued on Page 164)

IF it didn't cost a cent to store vast quantities of oil indefinitely—to say nothing of the evaporation losses—then wildcatting, gushers and new pools could multiply without endangering the price structure or wasting a National resource

But since tankage costs money and interest has a habit of piling up, there are definite limits to our capacity to store oil above ground

Thus in "flood times" the inevitable happens—prices tumble, old refining methods, such as the skimming of crude and selling of fuel oil, are wastefully employed to obtain gasoline

A fine picture for a major industry! Let's paint a better one All that is needed is a good mixture of determination, fairness, knowledge and ability

These ingredients the industry has and should now use

Universal Oil Products Company
Owner of the Dubbs Process
310 South Michigan Ave
Chicago, Illinois

Empire:		
Barker	1	0
Edmundson	2	2,131
Gypsy:		
Bora	2	0
Bruner	3	5,482
Carter	5	5,827
Earl	1	0
McFarland	2	0
Noble	3	4,105
Peter	4	1,395
State	4	377
Strain	1	12
Independent:		
Bruner	3	1,905
Sullivan	4	5,076
Knapp	3	2,080
Gaines	2	11,140
O'Dell	4	3,050
Interocean:		
Payne	1	40
Magnolia:		
Bryant	4	1,770
Cowden	2	724
Edmundson	2	1,721
Holmsley	5	7,857
Ingram	1	70
Lena	3	387
Seay	4	2,443
Simpson	4	460
Sparks	6	5,116
Mid-Continent:		
McCumber	6	2,595
Mid-Kansas:		
Anderson	1	0
Phillips:		
Dunnaway	1	30
Graham	6	1,392
Philmack:		
Dobbs	2	0
Prairie:		
Baker	1	50
Davis	3	2,740
Graham, C.	2	3,345
Graham, O.	4	7,345
Stidham	9	14,240
Roxana:		
Bayliss	1	29
Hearn	1	36
Spencer	2	3,751
Sinclair:		
Foreman	1	15
Hollins	3	3,825
Skelly:		
Spencer	2	1,481
Anderson	1	100
The Texas Company:		
Brown	3	3,150
Rodgers	1	6,070
Wilmont	4	45
Tidal:		
Watkins	4	1,480
Twin State:		
Barker	1	2,160
Hearn	1	2,100
Total	195	167,497

Seminole

Carter:		
B. Carter	2	250
J. Carter	3	68
F. Carter	3	160
Creamer	2	80
R. Cudjo	4	675
W. Cudjo	2	20
Gilliland	2	355
Grisso, M.	1	486
Grisso, W.	6	1,135
Knapp	3	1,020
Killing, M.	12	11,040
Killing, G.	4	1,375
Lukes	7	1,500
Ponder	2	65
Simpson	3	185
Strother	4	890
Vierson	4	475
Amerada:		
Fixico	4	1,235
Killing	4	510
Rentie	3	985
Atlantic:		
Cudjo	3	650
Barnsdall:		
Carter	9	3,651
Henry	2	554
Jones	4	1,250
Empire:		
Gross	3	667
Wilson	2	392
Gypsy:		
Butler	3	718
Carter	8	1,342
Cudjo	5	735
Fixico	7	230
Harjo	3	1,145
Wolf	6	62
Independent:		
P. Fixico	3	280
Harjo	2	479
Independent and Garland:		
T. Fixico	8	759
Independent and Interocean:		
Jones	4	530
Indian Territory:		
Allen	1	...
Bowlegs	11	3,470
Fleet	1	144
Gooden	4	316
Harjo	4	861
James	4	1,041
Reed	3	26
Kingwood:		
Johnson	3	1,347
Magnolia:		
Cheparney	1	160
Franks	4	831
Mid-Continent:		
Rentie	9	1,580
Tayeche	7	369
Mid-Kansas:		
Jacksey	1	...
Pressley	1	52
Wilkins	1	434
Phillips:		
Strothers	3	217
Philmack:		
Butler	3	2,255
Prairie:		
Gross	5	80
Mason	1	485
Spencer	1	15
Strother	8	1,176
Pure:		
Strother, A.	17	3,572
Strother, B.	5	2,516
Strother, C.	1	787
Roxana:		
Harber	2	315
Lashley	2	71
Sinclair:		
Carter	2	25
Cudjo, A.	6	1,065
Cudjo, B.	3	1,330
Dicey	2	885
Fixico	4	1,030
Slick:		
Cudjo	3	476
Franks	8	1,671
Giblet, Ida	...	3,478
Giblet, Sam	1	75
Superior:		
Cudjo	4	965
Texas:		
Mayhue	1	295
Strothers	1	25
Tidal:		
Carter	5	900
Fixico	8	491
Harjo, D.	1	985
Harjo, T.	6	280
Mahardy	3	54
Tayeche	2	45
Turman:		
Cudjo	4	984
Grisso	1	176
Jones	4	1,114
Total	323	73,717

Searight

Carter:		
Davis	7	4,870
Frazier	5	5,075
Kiker	1	35
Mandler	1	55
Scott	1	40
Amerada:		
Johnson	1	35
Strother	1	100
Gypsy:		
Cudjo	3	1,132
Mid-Continent:		
Grayson	6	1,155
Soloche	2	1,555
Prairie:		
Cannon	1	15
Carter	1	...
Houck	1	7
Kincaid	7	710
Wiemer	1	10
Pure:		
Aldridge	5	6,947
Roxana:		
Strother	2	2,013
Sinclair:		
Polly	4	2,440
Twin State:		
Varnum	1	817
Wilcox:		
Chupco	6	4,521
Total	57	31,532
Total Bowlegs	236	142,199
Total Little River	14	35,898
Total Earlsboro	197	167,497
Total Seminole	323	73,717
Total Searight	57	31,532
Grand total	827	450,843

Creek County

Gibson & Becker's No. 2 Miller Tiger, NE cor. SW NW SW, Section 17-17-7, is rigging up. Producers & Refiners Corp.'s No. 3 Harjo, NW cor. NE SE, Section 18-14-10, is drilling at 2,890 feet. No. 4 Harjo, SW cor. SE NE, Section 18-14-10, is spudding. Sibble & O'Hare have the rig on the ground for No. 1 Shreffner, SE cor. SW, Section 9-16-10. Pioneer Petroleum Co. has the rig up for No. 14 Bucktrot, NW cor. NE NE, Section 24-17-10. Irelan and others' No. 2 Jackson, NE cor. SE SE, Section 9-17-11, is drilling at 1,500 feet. Producers & Refiners Corp.'s No. 2 Warren, SE cor., Section 23-18-11, is a machine.

Steinberger & Smith's No. 1 Smiley, SE cor. NW NE, Section 19-19-8, was completed for 3,000,000 feet of gas in sand 2,635-50 feet. Empire Gas & Fuel Co.'s No. 1 Bigpond, SW cor. NW, Section 36-15-7, is a 45-bbl. well in sand 2,590-2,634 feet. Roxana Petroleum Corp.'s No. 1 Byrd, NE cor. NW NW, Section 15-15-8, has been shut in for 13,500,000 feet of gas in sand 3,208-20 feet. Independent Oil & Gas Co.'s No. 1 Wolfe, SE cor. SW NE, Section 18-14-10, is making 535 bbls. from the Wilcox sand 3,411-24 feet. L. Emery & Sons' No. 8 Jacobs, SW cor. NW SW NE, Section 21-16-9, is dry and abandoned at 3,516 feet. Cumberland Oil Co.'s No. 3 Strip, NW cor. NE SE SE, Section 13-17-10, is dry at 2,816 feet. J. R. Cole's No. 4 Strip, SW cor. NW SE SE, Section 13-17-10, was completed for 60 bbls. in the Dutcher sand 2,408-25 feet. J. H. Wright's No. 18 Tahkaney, NE cor. SW NW, Section 24-17-10, made 70 bbls. after a shot of 90 quarts in the Red Fork sand 1,830-70 feet. Liza Tim Oil Co.'s No. 3 Inman, CSL SW SW, Section 9-17-11, is a dry hole at 2,570 feet where the hole was lost. Cross and others' No. 1 Crews, C NW SW, Section 32-18-11, is dry and abandoned in the Turkey Mountain sand 2,880-85 feet.

Okmulgee County

Anadarko Western Oil Co. has built the rig for No. 1 Soule, NW cor. NE SE, Section 24-15-11. Transcontinental Oil Co.'s No. 2 F. Hawkins, NW cor. SE SW, Section 9-15-13, is spudding. F. D. Misner's No. 3 R. Carter, CSL SW NE, Section 10-15-14, is drilling at 300 feet. W. B. Pine has the machine at the location for No. 1 Skidmore, SE cor. NW, Section 10-15-14. A. W. Cline's No. 1-A, H. Rowe, NW cor. SW NW, Section 20-15-14, is drilling at 200 feet. J. L. Powell has moved a machine out for No. 4 B. Thomas, CSL NE SE, Section 23-14-14. F. A. Roberts' No. 7 Rentie, CNL SW NW, Section 18-14-15, is drilling at 500 feet. A. Shelton's No. 2 Simmer, NW cor. SW, Section 32-13-14, is drilling at 110 feet.

Sheldon Oil Co. and others' No. 1 Morton, CEL SE SW, Section 15-13-12, was completed for 75 bbls. in the Wilcox sand 2,884-88 feet. Briscoe and others' No. 1 Briscoe, CNL SW SE, Section 26-15-12, is dry at 2,220 feet. Misner, Lavery and others' No. 3 Carter, CNL NW SE, Section 10-15-14, was completed for 50 bbls. in sand 984-97 feet. L. Neal and others' No. 1 Berryhill, SE cor., Section 17-14-13, is a dry hole at 2,957 feet.

Okfuskee County

Kingwood Oil Co. and others' No. 1 Bruner, C NW SW, Section 15-10-9, has been shut in for 43,000,000 feet of gas in the Papoose sand 3,257-83 feet. Mid-Continent Petroleum Corp.'s No. 1 Bruner, SW cor. NE, Section 16-10-9, is dry at 3,299 feet.

Tulsa County

L. C. Butler's No. 2 Billy, NW cor. SE SE, Section 32-17-14, is spudding. Ellen Oil & Gas Co.'s No. 6 Island, NW cor. NE NE, Section 25-18-14, is drilling at 300 feet. Glidden Oil Co.'s No. 2 Vannest, CSL SE NE, Section 34-19-13, is spudding. Holmes and others' No. 2 Bemoere, NE cor. NW NE, Section 18-19-10, is spudding. Anadarko Western Oil Co.'s No. 1 Hodge, NW cor. NE NW SW, Section 33-19-11, is spudding. Sheridan Oil Co.'s No. 1 Unallotted, NW cor. SW, Section 10-16-12, was completed for 3,500,000 feet of gas in the Dutcher sand 1,948-56 feet.

Beckham County

Producers Syndicate has the rig timbers on the ground for No. 1 Thompson, SE cor. NE SE, Section 21-9-23w.

Carter County

Magnolia Petroleum Corp.'s No. 13 Adams, NE cor. SE NE, Section 10-2s-3w, was completed for 33 bbls. from a series of sands 2,375-3,400 feet.

Cleveland County

Wiser Oil Co.'s No. 1 Byrd, SW cor. NW, Section 25-6-1, is dry and abandoned at 4,515 feet.

Cotton County

Hurley and others' No. 1-A Dorrance, CWL SE SW, Section 19-1s-9w, is rigging up rotary tools.

Garfield County

Sinclair Oil & Gas Co.'s No. 19 Hartley, SW cor. NW, Section 18-22-3w, Garber Pool, formerly completed at 4,225 feet is being deepened and now fishing at 4,260 feet. T. T. Eason and others' No. 1 Doak, CEL NE NW, Section 26-22-4w, is drilling at 1,060 feet. Chappell and others' No. 4 Dively, C SW SE, Section 14-22-4w, is drilling at 1,200 feet. Charles E. Knox has a rotary rig up for No. 8 Crooks, NE cor. SW SW NE, Section 26-22-4w. Oil States Refining Co.'s No. 1 Barnes, SW cor. NE NW, Section 15-23-3w, is drilling deeper at 3,140 feet. Marland Oil Co.'s No. 1 Garber, NW cor. SE, Section 19-23-3w, formerly completed as a gas well at 5,244 feet has been deepened to 5,283 feet and now producing 457 bbls.

Beopple and others' No. 1 Mathis, NE cor. SW SW, Section 20-22-3w, has been abandoned at 2,850 feet. Roxana Petroleum Corp.'s No. 1 Brunken, SW cor. NE, Section 29-23-4w, has been abandoned at the total depth of 6,308 feet.

Grady County

Magnolia Petroleum Corp. made location for No. 3 Dryden, SW cor. NW SE, Section 35-5-8w. Location was made for No. 3 Duke, SE cor. NE SW, Section

(Continued on Page 164)

EASTERN UNION COUNTY WILDCAT IS CHIEF INTEREST IN ARKANSAS

By Nell Williams

SHREVEPORT, La., Sept. 26.—The chief interest in wildcatting in the Arkansas-North Louisiana division was centered the past week in that district of eastern Union County, Arkansas, around Section 1-17-14, about 7 miles northeast of the East El Dorado Field and around the same distance north of the Lawson-Urbana gas area.

In that district the outcome of two wildcats are being awaited, each of which showed up good with patent sand testers. The past week Magnolia Petroleum Co.'s No. 1 Carroll, Section 1-17-14, was tested in a formation at 2,975-82 feet showing better than 5,000,000 feet of gas. As was reported last week, Ohio Oil Co.'s No. 2 Crain, same section, tested 75 bbls. of clean oil and 2,000,000 feet of gas from 3,015-20 feet.

Casing has been run in each test, in the former being set at 2,975 feet and in the latter at 3,007 feet, preparatory to making wells. Making of good wells in these two tests would mean an important factor in that district as developments since the bringing in of the discovery well, Ohio Oil Co.'s No. 1 Crain, same section, have been anything but favorable, the two other tests drilled failing to find and showings although going considerably deeper.

The discovery well was completed the latter part of June pumping 50 bbls. of clean oil from a sand at 3,014-20 feet and still is producing better than 45 bbls. with only a showing of water and b.s.

Two New Tests

Two new tests are starting in the immediate vicinity of Moffett and associates' No. 2 Moore, Section 5-9-12, Pleasant Hill Field of northern Sabine Parish, the wildcat which blew in flowing 97 bbls. of clean oil daily from a depth of 3,254 feet. Another is rigging up some distance to the north in DeSoto Parish. This well since blowing in has dropped in production to between 600 and 650 bbls. daily.

In Union County, Arkansas, Mazda Oil Corp.'s No. 1 Boyd, Section 9-17-15, between the El Dorado and Smackover Fields, tested dry with a sand tester at 2,524 feet but now is drilling ahead at 2,599 feet in gumbo. Two Ouachita County wildcats tested salt water the latter part of the week. These were H. M. Harrell's No. 1 Camden, Section 12-12-18, and Magnolia Petroleum Co.'s No. B-1 Stout, Section 28-14-16. The former tested in the Nacatoch sand at 1,650 feet and the latter at 2,517 feet and also at 2,520 feet.

In Calhoun County, Genther and associates are trying to kill a fresh water flow in No. 1 Stout, Section 3-14-16, which broke in while they were drilling around 1,830 feet. The water is believed from the 700-foot level.

Woodley & Collins' No. 1 Lincoln, Section 21-16-10, southeastern Bossier Parish, La., tested dry with a sand tester at 927 feet. It failed to have even a showing of gas or oil. This well is checking comparatively high.

A 35-bbl. producer in the Georgetown district of Grant Parish, Louisiana, and a 20,000,000-foot gasser in Richland Parish were the only wildcat producers completed during the week. The former is a semiwildcat.

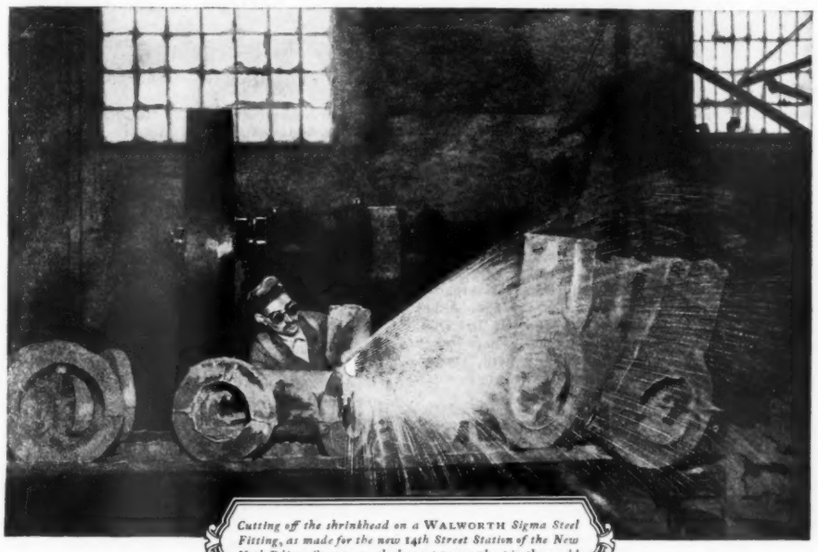
As the week closed, Palmer Corp. was getting ready to bail No. 1 Pioneer, Section 16-20-10e, West Carroll Parish, northeastern Louisiana. The test is 3 feet in rock, believed the Monroe gas rock, at 2,679-82 feet. It failed to show anything while drilling in.

NORTH LOUISIANA

Bossier Parish

Bahan & Davis' No. 2 Mays, Section 22-23-12, Carterville Field, northern Bossier Parish, is being drilled deeper after testing an estimated 200,000 feet of gas at 3,102 feet. Bethany Oil & Gas Co.'s No. 2 Dodson, Section 16, is drilling at 2,200 feet. Magnolia Petroleum Co.'s No. 1 Dodson, Section 16, is drilling shale and boulders at 3,010 feet.

(Continued on Page 158)



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Louisiana-Arkansas Output Steady

Little Fluctuation in Production as Completions Generally Are of Routine Nature. Heavy Oil at Pine Island

By Neil Williams
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., Sept. 26.—Except for the fact that Smackover crude reductions initiated September 17 were followed by all companies during the week establishing a new uniform schedule, very little of importance transpired in the Arkansas-North Louisiana division the past week. Completions, including abandonments, while greater in number than for any similar period for several months, offered little of interest and production in all fields was fairly steady, the daily average output for the entire division reflecting a decrease of only 305 bbls.

Completions included two pumping wells in the Smackover Field; two pumpers in the Irma Pool of Nevada County, Arkansas; a small pumper in the Cotton Valley Field, Webster Parish, Louisiana; two wells in the Urania Field, LaSalle Parish; a semiwildcat in the Georgetown district in the Urania territory but in Grant Parish; two shallow wells in the Bellevue Field of Bossier Parish. Except for the Grant Parish well all are in proven territory, and, including another Trinity horizon well in the Pine Island Field, Caddo Parish, Gulf Refining Co.'s No. 15 Tyson, previously reported, added less than 900 bbls. of new production.

New gas wells included one Pine Island producer; two in the Monroe district, northeastern Louisiana; one in Richland Parish; one in Carterville Field, Bossier Parish; one in the Smackover Field of Arkansas, and one at Cotton Valley, Louisiana. The latter, however, is a deep Trinity horizon well, originally completed at 4,560 feet but deepened to 4,657 feet. Initial gas production totaled an estimated 75,000,000 feet daily.

Few New Operations

Comparatively few new operations of importance were started during the week. The Pleasant Hill district of northern Sabine Parish has not responded to any great extent so far to the new well which was brought in there 10 days ago flowing 97 bbls. an hour. Arkansas Fuel Oil Co. has started another test in that district, and Magnolia Petroleum Co. has a derrick up for another. These are in Section 32-10-12, just north of the new well (Moffet and associates' No. 2 Moore) in Section 5-9-12. Further to the north in DeSoto Parish, Wingfield and associates are rigging up for a test. The new Moffett well, as has been the case with other wells in that district, has dropped sharply in production and now is making only between 600 and 650 bbls. daily.

Wells so far completed in the Pleasant Hill Field have gone only to depths usually ranging from 3,100 to 3,300 feet but two tests now are going down for the first deep tests of the district. These are Arkansas Fuel Oil Co.'s No. 10 Logan, Section 32-10-12, and Foster and associates' No. 1 Nabors, Section 30. The former has drilled to a total depth of 3,980 feet, and after cementing the bottom, is reaming at 3,393 feet. The latter had a gas blow-out at 3,275 feet but that was killed and the test is going on down.

The territory in northeastern Union County, Arkansas, northeast of the East El Dorado Field is waiting developments in Ohio Oil Co.'s No. 2 Crain, Section 1-14-21, which tested with a sand tester 75 bbls. of oil and 2,000,000 feet of gas in a broken formation at 3,015-20 feet. Casing has been set at 3,007 feet and the well should be completed the early part of this week, making the second well in this wildcat district.

Another test, Magnolia Petroleum Co.'s No. 1 Carroll, in the same section also looks good for a gasser, it having made a sand tester showing of more than 5,000,000 feet of dry gas during the week in a formation at 2,975-82 feet. Casing also has been cemented in this test at 2,975 feet preparatory to bailing it in. The formation in this test, however, seems to be entirely different from that encountered in the Ohio Oil Co. well.

Production Steady

Production in the division was steady during the week, the daily average being 154,480 bbls. as compared with 154,785 bbls. of the previous week. There was very little fluctuation in any field. Daily average production by fields was:

North Louisiana	
Caddo light	13,210
Caddo heavy	4,880
Homer	4,700
Haynesville	7,080
DeSoto-Red River	5,015
Elm Grove	700
Bellevue	1,180
Cotton Valley	5,350
Urania	9,980
Pleasant Hill	1,260
Total	53,355
Arkansas	
El Dorado	5,630
Lisbon	3,000
Smackover light	9,960
Smackover heavy	78,510
Stephens	1,200
Nevada	2,650
Bradley	125
Total	101,125
Total both areas	154,480
Total last week	154,785
Decrease	305

A summary of operations of the week shows 25 completions, 12 wells waiting on standard pumping rigs; 11 temporarily abandoned, 179 drilling, 9 rigs, 28 derricks and 21 locations.

Heavy Oil at Pine Island

Of local interest in the Pine Island Field of Caddo Parish is the encountering of heavy oil at 2,845 feet by Magnolia Petroleum Co.'s No. 26 Raines, Section 22-21-15. This test is flowing 100 bbls. of fluid and 4,000,000 feet of gas. This is the first heavy oil encountered at this depth in the Pine Island Field. Wells 3 or 4 miles west have had showings of this oil at the same comparative depth.

Another deep Pine Island test, Golden Rod Oil Co.'s No. A-1 Hampton, Section 15-21-15, tested salt water without a showing of oil at 3,745 feet. It is being drilled deeper. Nearly all the late deep wells in this district have been showing up unfavorable which has caused some uncertainty as to the half dozen other deep tests nearing the producing horizon.

Operators now are watching the work being done with gas lifts in the Pine Island Field. Two companies, The Texas Company and the Magnolia Petroleum Co., have installed compression units the past few weeks and are putting in others and are conducting experiments in blowing some of the deep wells. Much Pine Island gas has been allowed to blow in the air because of inadequate line facilities. This fact has led these two companies to put the gas to use in an attempt to better their oil production.

The Carterville Field of northern Bossier Parish got another gas well in Bahan & Davis' No. 1 Mays, Section 22-23-12, producing an estimated 10,000,000 feet of gas from a total depth of 3,111 feet. This well originally tested only 2,500,000 feet of gas at a depth of 3,102 feet but was deepened to its present level. The gas is accompanied by a heavy flow of salt water.

In the Bellevue Field of Bossier Parish, the old Hanby lease, Section 14-19-11, has been taken over by R. L. Crook, who drilled three shallow wells during the week, two making small producers at 368 and 407 feet respectively while the third tested salt water at 515 feet. This operator also is rigging up for another shallow hole.

In the Elm Grove Field, the Palmer Corp. has abandoned No. 4 Bossier Land & Livestock Co., Section 9-16-11, after drilling to a total depth of 5,370 feet and testing salt water.

NORTH LOUISIANA

Bossier Parish

Two shallow producers were drilled in the Bellevue Field during the week and another shallow test showed salt water and was abandoned. The two producers were W. L. Crook's Nos. 4 and 5, Section 14-19-11, the former flowing 15 bbls. oil from sand at 407 feet, and the latter 4 bbls. from sand at 368 feet. No. 6 Larkin was abandoned at 515 feet but the same operator is rigging up for another No. 6. Humble Oil & Refining Co.'s deep test in the Bellevue district, No. 30 Bliss & Wetherbee, Section 15, is drilling hard sand at 4,135 feet.

In the Elm Grove district, Palmer Corp. has abandoned its deep test, No. 4 Bossier, Section 9-16-11. This test was dry at 5,370 feet. J. S. McCullough's No. 3 Hodges, Section 25-16-12, is drilling at 1,350 feet.

Caddo Parish

Arkansas Fuel Oil Co. is drilling at 3,395 feet in No. 2 Bashara, Section 23-21-15, Pine Island Field. This company's No. 1 Huckaby, Section 14, is drilling shale at 3,791 feet. Arkansas Natural Gas Co.'s No. 2 Lane, Section 13, is fishing for the liner at 3,641 feet. Dixie Oil Co.'s No. 9 Caddo Mineral Land Co., Section 23, is drilling at 2,760 feet. This company's No. 89 Dillon, Section 14, is coring at 3,658 feet. No. 90 Dillon is drilling at 3,078 feet, and the No. B-6 Files & Mabry, same section, at 3,377 feet. Dixie's No. A-e Noel, Section 13, is in lime at 3,891 feet. Its No. 10 Slattery, Section 27, is in the same formation at 4,070 feet. The latter is being drilled with cable tools. Golden Rod Oil Co. has cemented 6⅝-inch casing at 3,700 feet in No. A-1 Hampton, Section 15. Gulf Refining Co. is making arrangements to blow No. 10 Herndon, Section 15, with gas. This test tested salt water with a show of oil and gas at 3,699 feet. Total depth of the hole is 3,709 feet. This company's No. 15 Tyson, Section 14, already has been put on the gas and is making 300 bbls. of oil with a heavy flow of salt water from a depth of 3,798 feet.

Haynes Brothers made another test in their No. 2 Murray, Section 14, testing salt water with a showing of oil at 3,669 feet. This well has been cemented back to the 3,664-foot level and a third test will be made. These operators' No. 2 Spell, Section 15, is down 2,450 feet. Magnolia Petroleum Co. has a rig up for No. A-8 Hampton, Section 15. This company's No. 26 Raines, Section 22, is making an estimated 100 bbls. of oil and 4,000,000 feet of gas from the 2,845-foot level. This company's No. 21 Robertshaw, Section 23, is down 3,600 feet where 8⅛-inch casing has been cemented. A location has been staked for No. 22 Robertshaw, same section, to be another deep test. Ohio Oil Co.'s No. 25 Smith, Section 12, has been shut down after drilling at 4,750 feet.

Pittsburgh Oil & Development Co. is figuring on deepening No. 1 Herndon, Section 15. This test showed for a hole full of salt water after plugging back to 3,734 feet. It originally was drilled to 3,815 feet. This company's No. 1 Huckaby, Section 15, has been completed as a gasser, blowing 15,000,000 feet of gas with a heavy flow of salt water from a depth of 3,740 feet. The Texas Company's No. 49 Caddo Mineral Land, Section 23, is drilling shale at 3,560 feet. No. 50 is in lime at 3,143 feet and No. 51 at 2,681 feet. No. 6 Herndon, Section 14, which tested try at 3,710 feet, is to be blown with gas in an effort to make some production from a total depth of 3,727 feet. No. 9 Herndon, same section, is drilling lime at 3,048 feet. No. 9 Herold, also this section, is down to a total depth of 3,573 feet and 8¼-inch casing has been cemented at 3,555 feet. No. 10 Mabry, Section 15, is down 3,643 feet with 8-inch casing cemented at 3,635 feet. No. B-14 Noel, Section 14, a deep test just started by The Texas Company, is drilling at 1,200 feet. No. 19 Raines, Section 15, tested salt water at 3,711 feet but has been deepened to 3,758 feet where 8¼-inch casing has been cemented.

Waskom and Greenwood

In the Waskom and Greenwood districts, Belchic & Laskey have started operations at No. 2-P Sharp, Section 10-18-16. Greenwood Producing Co.'s No. 1 McCutcheon, Section 15-17-16, is drilling shale at 1,480 feet. This company's No. 1 Scott, Section 5-16-16, cored salt water sand at 1,064 feet and has been abandoned. Magnolia Petroleum Co.'s No. 1 Furrh, Section 28-18-16, is in chalk rock at 1,625 feet. A rig is up for No. 1 (John) Furrh, Section 32. This company's deep test, No. 1 Bell, Section 4-17-16, has been abandoned as dry after drilling to 3,059 feet.

W. W. Dodson and associates' No. 6 Rives, Section 5-20-16, main Caddo Field, is to be put on the beam having encountered a foot of oil sand at 1,856-66 feet. Falcon Drilling Co.'s No. 1 Schmidt, Section 27-20-15, is drilling at 2,230 feet. In Section 13, D. S. Richardson's No. 5 Youree-Randolph is bailing casing at 2,105 feet after having drilled out the 6⅝-inch plug. Superior Oil Co.'s No. 6 Youree, Section 26, is standing 600 feet in oil and is to be put on the pump. It has 41 feet of broken sand at 2,260-2,301 feet. T. D. Gray and associates' No. 1 Hart, Section 29-21-16, is shut down waiting orders, having tested dry at 1,966 feet. Standard Oil Co.'s No. 189 Stiles, Section 27, is down 1,809 feet where 6-inch casing has been cemented.

In the extreme southwestern corner of the parish, Tubbs and associates are drilling at 150 feet in No. 1 Hines, Section 9-14-16. Woodley Petroleum Co.'s No. B-3 Knight, Section 11-15-12, southeastern corner of the parish, is drilling at 1,850 feet. The latter company has staked a location for No. A-1 McVey, Section 23-19-14, north of Shreveport.

LaSalle Parish

Ayers Brothers have a 60-bbl. pumper in No. 5 Urania, Section 30-10-2e, Urania Field, completed in sand at 1,519-30 feet. Hope Oil & Gas Co. also got a well in the Urania Field, its No. 4 Urania, Section 19-10-2e, flowing 25 bbls. from sand at 1,558-70 feet. B. Hunt is drilling plug in No. 6 Urania, Section 7-10-2e, at 1,505 feet. Shreveport Oil Corp. is rigging up again for No. 1 Morrow, Section 26-10-1e. The original derrick for this test was abandoned. Wingfield and associates are drilling in rock at 3,071 feet in No. 2 Gibson, Section 2-9-1e. Zoder and associates are coring at 1,400 feet in No. 5 Urania, Section 7-10-2e.

Monroe District

W. C. Feazel is drilling plug, cemented at 2,093 feet, in No. 1 Faulk, Section 15-20-4e, Morehouse Parish. Natural Gas Producing Co. has cemented 183 feet of 12-inch surface casing in No. 9 Tensas Delta, Section 27-22-4e. The Texas Company's No. 1 Silvey, Section 22-20-6e, is drilling gumbo at 2,927 feet.

In Ouachita Parish, W. W. Frierson, Section 17-19-4e, is drilling around 1,-

(Continued on Page 157)

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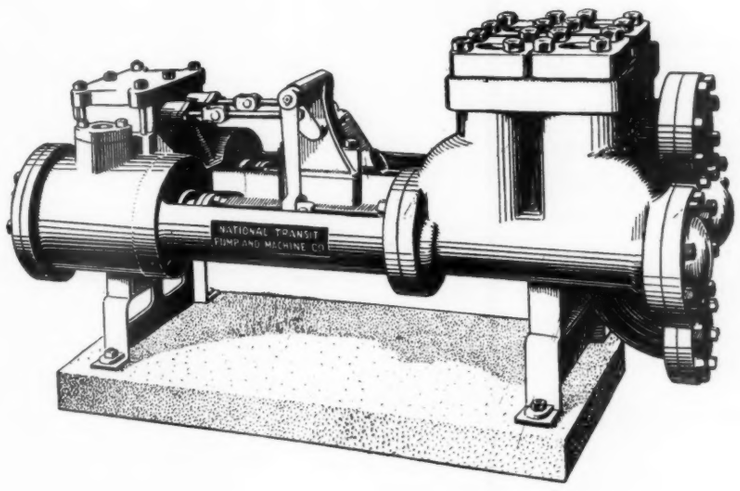

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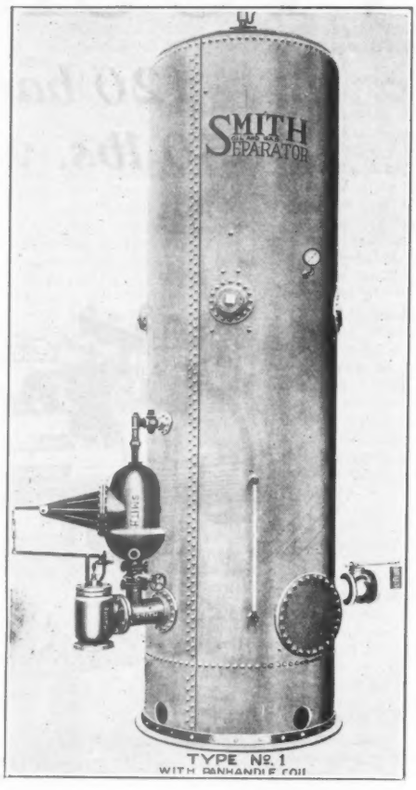

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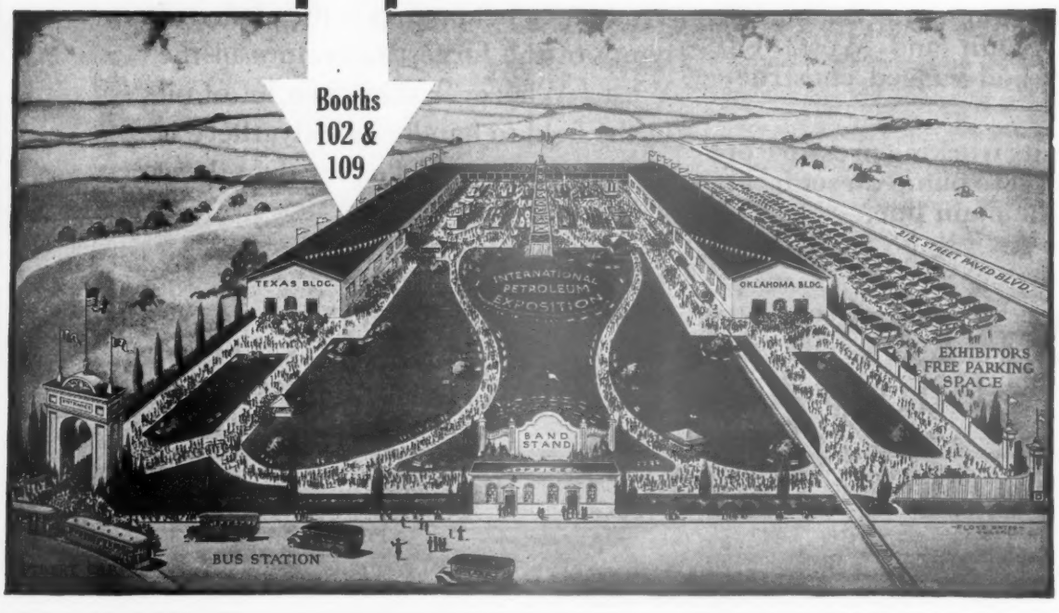

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Expected to Define New Dale Field

Humble's No. 1 Clingensmith in Caldwell County Due In; Magnolia Finds Oil Sand in the Carolina-Texas Field

By B. D. Stevenson
Staff Correspondent, Southwest Texas Fields

SAN ANTONIO, Tex., Sept. 26.—Attention in the new Dale Field in eastern Caldwell County, is now turned to the Humble's No. 1 Clingensmith which is due in the first of this week and which got the Serpentine at 1,920 feet which is the highest of any well in the field. The elevation is 518 feet and the depth below sea level is therefore 1,402 feet which is the highest in the field with the elevation taken into account.

The well is a little more than an offset to the northeast of No. 2 Clingensmith owned jointly by The Texas Company and Humble company which was completed last week and is the best well in the field. It came in extra strong the first half hour and for the first 18 hours made 2,500 bbls. and by late in the week was flowing 700 bbls. It is a northeast offset to The Texas Company's No. 2 Beatty which in turn is a southeast offset to the discovery well of the field. The Texas Company's No. 2 Beatty came in with the valve nearly closed and made 537 bbls. the first day the first of the week. By the end of the week it was making about 70 bbls. No. 1 Clingensmith of The Texas Company and Humble company, a northeast offset to the discovery well, made such a small amount of oil that it has been abandoned. Texas and Humble's No. 3 Clingensmith next southeast from No. 2 failed to flow till the tubing was set to put it on the pump when it began to flow. It will make a good pumper. This group of three wells are the best in the field. Sun-Empire's No. 2 Talley, 3,500 feet southeast of the discovery well, first reported a failure, went on the pump and has been making about 30 bbls. a day ever since.

May Define Field

There is a chance for the field to run to the north, northeast and east and when the Humble's No. 1 Clingensmith is in it may help to define the field. Nearly everything else in the field is at a standstill now waiting for it. If it makes a big well the chances are some new locations will be announced. E. L. Smith Oil Co. has some acreage off in that direction. Manifestly the field is looking 100 per cent better than it did the week before and they are saying in the field now that the Serpentine plug is there but was not where it was first thought to be. The first wells drilled after the discovery well either failed to get Serpentine or else found it so compact that it had no opportunity much to produce. The last wells drilled have come in good though they have subsided rather quickly.

Carolina-Texas Field

The next most interesting thing in proven fields is the Magnolia No. 2 C. W. Webster in the Carolina-Texas Field that has found the oil sand at 2,609 feet, found by the Usher Carson-Associated Oil Co. well on the Webster tract that came in at the same depth nearly a year ago and created so much excitement but could never be duplicated though it was offset in every direction. The Magnolia well is about a half mile northwest of the Carson-Associated well. It was tested on a tester and in 15 minutes the oil rose 75 feet in the drill stem. The well is in the E half of SW of NE of NW of Section 684. Magnolia owns a 15-acre tract and this well is in the NW cor. of the 15-acre tract. It drilled a well in the SE cor. of the tract which is a diagonal offset to the Carson-Associated well and it failed to get the 2,600-foot sand but picked up a sand at 3,000 that is making a small amount of oil. Due to the disappointments the other time, this new find is not going to create much excitement but it will start a new study of the field. The oil is high gravity.

Humble Pipe Line Co. is extending its pipe line 5 miles from the Randado Field in Jim Hogg County to the Alworth Pool in Section 39, south of the Randado Pool. Alworth-Stevens-Hild have not completed several wells that are producing a fair amount of oil and while the pool has had a hard time getting started, due to some disappointments, the pipe line promises to give it a boost. Humble must sooner or later extend its line down to the Charco Redondo Pool another 15 miles south and a little west in Zapata County where it contracted to take the oil and is now putting it in steel storage.

COMPLETIONS

Caldwell County

Sun Oil-Empire Gas & Fuel's No. 2 Talley, Dale Field, in Caldwell County, at 2,285 feet is pumping 30 bbls. daily.

The Texas Company's No. 2 Beatty in the same field at 2,008 feet made 537 bbls. in 24 hours choked in.

Texas & Humble's No. 2 Clingensmith also in the same field, at 2,056 feet drilled in the first one-half hour made at rate of over 7,000 bbls. daily and first 18 hours gauged 2,510 bbls.

Refugio County

Houston Oil Co.'s No. 10 F. Heard in the Refugio gas field at 2,230 feet is making 30,000,000 feet daily into lines and will be completed as soon as pressure goes off. Well came in and ran wild for a week.

Jim Hogg County

Moody Oil Corp.'s Nos. 10 and 11 Palacious in Survey 291, Block 11, Randado Field at 1,256 and 1,265 feet respectively were completed each a 25-bbl. well.

Webb County

Magnolia Petroleum Co.'s No. 1 Yeager-Strolman, in Block 65 of the Albercas Field, at 2,106 feet is 42,000,000-foot gas well.

Abandoned Tests

A. R. Beal, trustee's No. 1-A Ackerman, Survey 133½, Bexar County, has been abandoned dry at 917 feet in the chalk.

Humble Oil & Refining Co.'s No. 2 Yturri in Bexar County, topped chalk at 1,239 feet and has been abandoned at 1,252 feet.

Murchison's No. 1 Copeland, in the Dale Field in Caldwell County, total depth 2,568 feet is to be completed as water well.

Texas & Humble's No. 1 Clingensmith in the Dale Field, at 2,175 feet is a small well and is being abandoned.

Weinert and others' No. 1 Taylor in the same field at 2,200 feet has no Serpentine and is being abandoned.

John Sigmund's No. 7 Robinson in San Patricio County at 4,012 feet, lost hole and will be abandoned.

Houston Oil Co.'s No. 2-A Barnsley in Survey 268, Block 12, Carolina-Texas Field in Webb County, has been abandoned at 3,021 feet.

Cole Petroleum Co.'s No. 48 Benavides, in Survey 412, Block 5, in the Cole Field in Webb County, has been abandoned at 2,358 feet.

Houston Oil (Roxana) No. 1 "F" S. Benavides in Block 97, Cole Field, Duval County, has been abandoned at 1,801 feet.

New Locations

Cole Petroleum Co.'s No. 49 Benavides, Survey 411, Block 2, in Cole Field in Webb County, has derrick up.

W. F. Morgan's No. 2 Hinnant, Block 6, Share 1, Henne, Winch & Farris Field in Jim Hogg County, is location.

Moody Corp.'s No. 12 Palacious, Survey 291, Block 14, Randado Field in Jim Hogg County, has been spudded in.

Woodruff and others' No. 1 Kelsey, Porcion 76, Starr County, is having location made.

Associated Petroleum Co. has made location for Nos. 9-J and 10 Kohler in the Somerset Field in Bexar County.

Humble Oil & Refining Co. in Bexar County, just south of San Antonio, is making location for test on the Gembler lease.

C. W. Bates is preparing to make location for test in Blanco County, 8 miles east of Blanco City.

Humble Oil & Refining Co.'s No. 1 Clingensmith, Squire Damon Survey, in the Dale Field, 750 feet to southeast lines of survey and 150 feet to southwest lines of lease, is drilling at 1,200 feet; No. 2 Clingensmith, same survey, 750 feet to southeast lines of lease and survey and 150 feet to southwest lines of lease, is drilling at 400 feet; No. 3 Clingensmith, same survey, 150 feet to southeast lines of survey and 150 feet to southwest lines of lease, is rigging up.

The Texas Company's No. B-1 Beatty, Nich Kelly Survey, Dale Field, at 150 feet to southeast and southwest lines of lease, is at 2,142 feet, Serpentine topped at 2,068 feet and no oil showing.

F. A. Lain is making location in Live Oak County for test 3 miles north of the Cartwright Field.

Simmons Oil Co. has made location in Live Oak County for the No. 1 Griff.

Roxana Petroleum Corp. is making location for test in the south pasture of the West Ranch in Live Oak County.

Houston Gulf Gas Co. has announced location for Nos. 1, 2 and 3 A. W. Heard in the Refugio gas field; No. 2 Moody is drilling at 1,450 feet.

Houston Oil Co.'s No. A-2 Rooke in Refugio County, is drilling at 2,600 feet.

John Sigmund is rigging up, 350 feet southeast of No. 7 Robinson, for No. 9 Robinson in San Patricio County.

Sexat Oil Co.'s No. 7 Dunn is location in the C. P. Rachal Survey in San Patricio County.

Houston Oil Co.'s No. 1 Baldwin in Roos Survey, Block 5, and Nos. 2 and 3 Humble in same survey, Block 7, are new locations announced in San Patricio County.

Cole Gas Field—Duval

Houston Oil-Sun Oil Co.'s No. 1 S. Benavides, corner of Blocks 75-76-129-130, is location. Houston Oil Co.'s (Roxana) No. 1-"F" S. Benavides, Block 97, at 75 feet to northeast and southeast lines, is drilling at 1,380 feet. O. W. Killam's No. 8 R. Benavides, Survey 11, Block 6, located 585 feet to northwest and 150 feet to southwest lines, is rigged up; No. 2 Bruni, Survey 585, located 1,090 feet to west line and 150 feet to north line, has been spudded in; No. 1 Bruni, Survey 9, 500 feet to northwest lines and 150 feet to northeast lines (formerly Newton Drilling Co.) is drilling at 2,317 feet. Trussell, Cezeaux & Putman's No. 1 Bruni, Survey 10, located 150 feet to northwest lines and 450 feet to northeast lines, is drilling at 1,410 feet.

Simms Pool

Breen-Woodward and others' No. 1 Dinn, Survey 666, located 1,170 feet to north line and 150 feet to east line, clearing location.

Humble-Reiter-Foster Field

Humble-Reiter-Foster's No. 4 Kohler, Survey 400, located 660 feet to SW cor., is reworking at 2,709 feet.

Piedras Pintas Dome

Humble Oil & Refining Co.'s No. 7

(Continued on Page 157)

RYCADE WELL IN MAVERICK IS NOW BEING SIDETRACKED

By B. D. Stevenson

SAN ANTONIO, Tex., Sept. 26.—Rycade Oil Corp.'s No. 1 Chittin, in Maverick County, Block 7, Section 129, the first well in all Southwest Texas to produce from the Trinity sand, has started to sidetrack from 4,115 feet. Total depth is 5,640 feet. A little less than a year ago it got the first important showing of gas amounting to about 3,000,000 or 4,000,000 feet at a depth of 5,515 feet and a good share of the time since then has been spent on bad fishing jobs. When it reached a depth of 5,590 feet it was making around 28,000,000 feet of gas and 75 bbls. or so of oil, making it a sizeable well. They have been fishing on the last job for about two months. Interest in the well on the part of the oil industry is purely on the side of geology since the Rycade owns something like 100,000 acres with this well in the middle. Outside of the North & South's two wells in the Luling Field drilling in schist for the past 2,400 feet, this well of Rycade's is the deepest well in Southwest Texas both in feet and in the age of the formation it is drilling in. Four miles northwest of No. 1 Chittim, the Rycade has a fishing job in its No. 2 Sullivan at 5,132 feet and is in black shale. Two miles south and a little east of No. 1 Chittim, Rycade is starting No. 2 Chittim in the NE cor. of Section 158, Block 7.

Schlessinger Well

Schlessinger Oil Corp.'s No. 1 Moody, in northwestern Duval County, 20 miles north of the Cole gas field, has thus far not made a test except the drill stem test. Depth is 2,401 feet and it had a showing of oil. There was difficulty in getting the casing set and it pulled in two at 400 feet from the bottom and a string of 8¼-inch is being run over the 400 feet of 6⅝-inch to get it loose. It may be some days before the facts are known. The well is one of the really important wildcat wells in the Laredo district, as Schlessinger about a mile east of this some months ago got an oil well at about this same depth but not big enough to classify as commercial. Also Magnolia got a gas well a few miles to the northwest at a greater depth. And furthermore, the well is near the Reynosa Escarpment and much of the production of Mirando is along or near the escarpment.

Humble and Reiter-Foster, in Survey No. 400, about half way between the Schlessinger well and the Carolina-Texas gas field in Webb County, are working with No. 4 Kohler and are now drilling at 2,747 feet. It made a 20-bbl. oil well at about 2,340 feet, and No. 6 Kohler made a small well at about the same depth. Thus far the oil is enough to keep a company working in the hope of finding a field but not enough to make a commotion. This spot, too, is near the Reynosa Escarpment.

Deep Drilling

Considerable interest in the Laredo district will be centered in the five wells

(Continued on Page 157)

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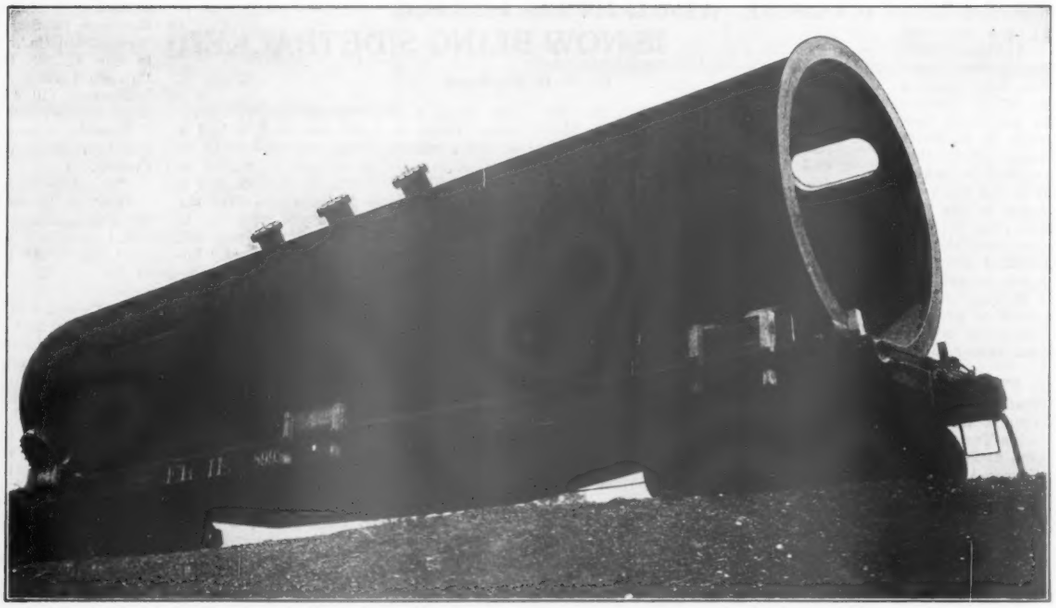

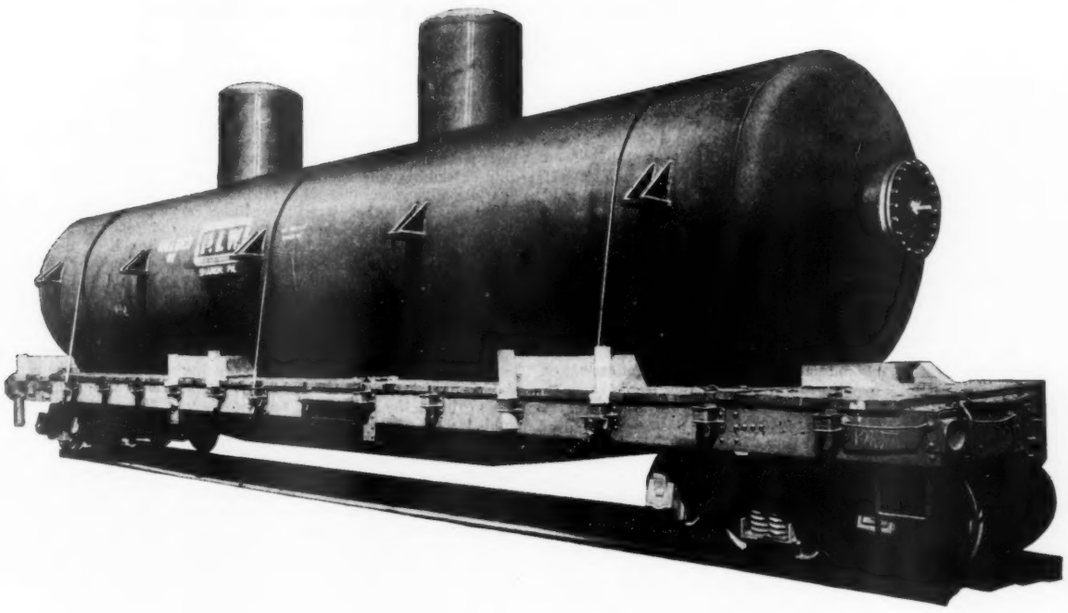

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California at About Peak for Year

Seal Beach, Just Holding Its Own, Is Key to Situation. It Is Difficult to Predict Outcome at Alamitos Heights

By L. P. Stockman
Staff Correspondent, California Fields

LOS ANGELES, Calif., Sept. 24.—Production figures during the past few weeks indicate that California has either already attained the last peak for the current year or should do so in the very near future. Total state production has been hovering around 635,000 and 640,000 bbls. daily and unless Seal Beach shows a very substantial increase in the immediate future California's production trend for the rest of the year will be downward. This field holds the key to the local situation almost exclusively as none of the other producing areas is expected to show more than a normal decline from now on. Production at Seal Beach, like the state output, just seems to be about holding its own and hence may take a turn in either direction.

The Alamitos Heights section of the Seal Beach Field, which it is still yielding large wells from time to time, does not seem to have any definite objective in view. Development work in this district has been characterized by both large and small wells at frequent intervals regardless of location structurally. For this reason it is extremely difficult to predicate the future trend of production so far as the time element is concerned. On numerous occasions offsets on the very apex of the Alamitos Heights structure have shown variations of from 1,000 to 2,000 bbls. in initial production. This is due, of course, to the fact that all wells are not taking the maximum penetration available. If all operations finished their respective wells at approximately the same depth stratigraphically it would be a rather easy task to keep a finger on the pulse of the situation but with one well being completed at 5,100 feet and a direct offset at 5,500 feet it is almost impossible to keep step with the fluctuations shown from time to time.

Deepened Four Times

The frequency with which operators have deepened producing wells at Alamitos Heights has probably never been equalled anywhere else in the United States and certainly not in California. This off again, on again, policy of resuming drilling every time a well settles or an offsetter drills another 50 feet and proves up a little more sand is not conducive to stabilized production. Many wells in this section of the field have been deepened as many as four or five times. With production now possible down to 5,500 feet on the apex of the structure a number of wells are again seeking this point. The only question at present appears to be whether these deepening projects will be completed before the town lot area starts on the down grade in high gear. Preliminary symptoms of smaller initial production of new wells in the future have already become manifest and while this has not yet been shown to any extent in total field production there is a general feeling among operators that production has started to ease off. For this reason it is logical to assume that daily output will begin falling off rapidly in the very near future unless a large number of good producers are completed to offset the decline in flowing wells.

The situation resolves itself right back again to the time element and the rapidity with which these deepening projects at Alamitos Heights are carried to completion. Considering all factors, it looks as though total state production will be averaging somewhere between 600,000 and 615,000 bbls. per day when the current year draws to a close. Just how much lower it will go next year remains to be seen. A lot depends on developments in the Casa Loma wildcat area at Bakersfield where a 20-foot oil sand has been definitely revealed by core samples. If the Pacific Eastern Production Co. should get a good producer in that section soon at least 25 new wells will be started within 30 days after completion. If, on the other hand, commercial production is not secured, things won't look quite so distressing. As the situation looks we can anticipate a varying downward trend for six months. The drop during this period will probably not be fast but it should be consistent, broken at times by the completion of new wells.

Seal Beach

With Alamitos Heights showing preliminary evidences of gas depletion in the deep sand operators will undoubtedly watch developments in this section of the Seal Beach Field very closely during the next week or 10 days. There are still a number of deepening projects to be finished in the lower horizon at Alamitos Heights but their effect on production is problematical as each day's delay in completion reduces the possible maximum initial daily production due to the fact that other producers are draining the oil sand in the meantime. Several wells drilled through the Wahl zone late last week and, while some are inclined to place considerable importance on this development, they were located at some distance from the apex of the structure and may not therefore be of any special significance. There is no questioning the fact that Alamitos Heights, the town lot area, is showing preliminary indications of gas depletion and this section may definitely pass out of the picture in the not distant future. This section has not reached the exhaustion stage by any means but will undoubtedly decline very rapidly as soon as the high point has been passed. The coming week will probably determine whether Alamitos Heights has already gone over the top for the last time or whether it will continue its upward trend for a short time.

The evidence of gas depletion is not reflected in the initial production of recent completions for on this basis one would assume that Alamitos Heights was still hitting on all six as there have been several really good wells finished during the past two weeks. The basis for assuming that the field is rapidly nearing the high point, if it has not already passed the peak, is the failure of new wells to hold up to anywhere near their initial daily production. Practically every well finished during the past 14 days has registered an abnormal decline. It is rather difficult to say definitely that Alamitos Heights has already gone over the top as daily production figures covering the Seal Beach Field have been misleading on several occasions in the past. This is due to the fact that operators have not all taken a uniform penetration in the oil sand and consequently wells are taken off production and deepened another 100 feet or so with uncanny regularity.

Worst Town Lot Drilling

Alamitos Heights stands out as one of the worst examples of town lot drilling ever witnessed by the oil industry in California. This is the first time in the history of the state that operators have engaged in haphazard methods of operation. It is well known that a large number of those engaged in development work at Alamitos Heights at present have been drilling in the dark, shooting for the pay but with no idea of where it is except that it must be around 5,200 feet. As a matter of fact, the bottom of the lower sand on top of the structure at Alamitos Heights is at approximately 5,500 feet. It is usually customary and somewhat of an unwritten law among California operators to exchange drilling information and the wisdom of this policy has been demonstrated on numerous occasions, as the protection against bottom water and the prevention of edgewater intrusion through faulty shut offs is mutually beneficial. Drilling operations in the town lot section of the Seal Beach Field, however, are conspicuous by the lack of co-operation between various operations and this is one reason why this district has exhibited such erratic tendencies. It is natural of course in a case of this kind where the early bird gets the flush production to hold out well depths and pertinent data and thus force offsetters to slow up drilling because of the necessity of coring frequently in order to minimize the possibility of running into bottom water.

Week's Completions

The Petroleum Securities headed the completion list during the current week with four wells whose aggregate initial daily production totaled 5,000 bbls. This entire quartet were recompletions after being redrilled and deepened from the upper to the lower sand. Nos. 1 and 2 on the Williams lease came in flowing 1,500 and 1,200 bbls. respectively from approximately 5,400 feet, the oil in each case being exceptionally clean and testing 28.6 degrees. No. 1 Nicholson came in under a natural flow making 1,100 bbls. of clean 28.9 gravity oil daily from 5,550 feet, while No. 4 on Bryant Lease-A showed an initial of 1,200 bbls. daily from 5,425 feet. Supplementing the four wells finished early in the week, the Petroleum Securities has just brought in No. 1 Kindig and No. 1 Brisendine but neither has yet actually completed the full 24-hour production test. Both are flowing at the rate of 1,500 bbls. and will no doubt maintain this rate for the initial 24 hours. The California Eastern finished the largest well completed during the week when No. 3 Judson was recompleted at an even 5,400 feet, from which depth it registered an initial of 3,180 bbls. of clean 29.3 gravity oil and 3,000,000 feet of wet gas. This company is deepening eight other wells in this section, one of which, No. 4 Judson, looks exceptionally promising for early production.

The Travis Drilling Co., under the personal direction of "Slim" Travis, recompleted No. 1 Alamitos as a 2,500-bbl. flowing well from 5,505 feet, the hole being finished with an 8⅝-inch oil string. Paul Getty recompleted one well and took another, No. 1 Cleaver, off production preparatory to carrying it down to the lower sand. Getty's new well was No. 4, a recompletion after being redrilled and deepened from the upper to the lower sand at 5,471 feet, from which depth it came in under a natural flow doing 960 bbls. of 28.1 gravity oil daily. Bottom water was encountered in this well at 5,570 feet but a 100-foot plug was put on bottom and that it is serving its mission is evidenced by the fact that lead line cuts are less than 2 per cent. The General Petroleum added a new well to its list of producers by bringing in No. 1 Campbell from 5,498 feet and, based on a 12-hour flow test, it is doing better than 1,400 bbls. daily. On the Wasem lease the company finished No. 9 at 5,516 feet and should turn it loose tomorrow. The Marland boosted its daily production 2,700 bbls. by recompleting No. 14 Selover after redrilling and deep-

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Company, Well, Location—	S-T-R	Depth	Status
Cal. Eastern, No. 1 Cypress, Potrero	27- 3-14	5,043	suspended
Associated, No. 1 Cypress, Potrero	34- 2-14	4,450	testing
Mont. Park Oil Co., No. 1 Browning, Monterey Park	26- 1-12	2,010	hd. sd. drilling
Circle Oil Co., No. 1 Pomeroy, Manchester	23- 3-14	4,280	suspended
Shell, No. 1 Mission, San Fernando	4- 2-15	3,785	reaming
Sou. Calif. Drlg. Co., No. 1 Matteson, El Segundo	1- 3-15	4,870	plug back
Carr, O. P. No. 2 Foster, San Juan Capistrano	13- 8- 8	3,741	hd. sd. drilling
Thomason & McCoy, No. 1 Rinz, Saugus	27- 5-16	1,610	suspended
Southwest Pet. No. 1 Ramsauer, Watts	4- 3-13	3,360	hd. sd. drilling
San Clemente Oil Co., No. 1 Peck, Hawthorne	20- 3-14	4,320	sd. sh. drilling
West. Oil & Ref. Co., Well No. 1, Hawthorne	29- 3-14	Rig	suspended
White Behr, No. 1 Watson, L. A. County	21- 4-14	Rig	rigging up
Shell, No. 1 Allec, Placentia	31- 3- 9	3,550	sd. sh. drilling
Standard, No. 1 Olive, Orange Co.	17- 4- 9	3,572	hd. sd. drilling
Son. C. A., No. 1 Pinerton, Orange Co.	5- 5-11	1,973	gr. sd. drilling
Standard, No. 1 Rindge, Palms	36- 1-15	Rig	in litigation
Hemet Pet. Co., No. 1 Ward, Riverside Co.	9- 5- 1	1,330	hd. sd. drilling
Anchor Oil Co., No. 1 Hudson, Los Angeles Co.	19- 2-10	1,360	sd. drilling

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Associated, No. 1 Smith, Kettleman Hills	12-23-18	2,043	suspended
Bolsa Chica, Well No. 1 Kettleman Hills	30-23-19	3,408	sd. sh. drilling
General Pet., No. 1 Burbank, Kettleman Hills	30-23-19	3,105	pipe bad
General Pet., No. 2 Oschener, Kettleman Hills	26-22-18	4,463	gr. sd. drilling
General Pet., No. 1 Dome, Kettleman Hills	4-24-19	3,700	gr. sd. drilling
C. C. M. O., No. 1 McGlashan, Kettleman Hills	17-24-19	4,860	fishing
South Coalinga, Well No. 1, Kettleman Hills	35-24-19	2,320	sd. sh. drilling
McPhail, Hugh, Well No. 1, Kettleman Hills	13-24-18	2,071	suspended
Superior Oil Co., Well No. 1, Kettleman Hills	26-21-17	1,603	bl. sh. drilling
Milham Explt'n., No. 1 Kettleman, Kings Co.	2-22-17	3,860	hd. sd. drilling
Shell, No. 2 Berlywood, Moorpark	32- 3-20	5,230	hd. sd. drilling
C. C. M. O., No. 1 Hobson, Ventura Co.	22- 3-24	6,600	br. sh. drilling
C. C. M. O., No. 1-B Hobson, Ventura Co.	16- 3-24	5,140	br. sh. drilling
Pan America, No. 1 State, Ventura Co.	17- 3-24	3,046	sd. sh. drilling
Pan American, No. 1 U. S., Ventura Co.	17- 3-24	Rig	suspended
Scott Petroleum, No. 1 Surf, Ventura Co.	35- 4-24	522	sd. drilling
Continental Oil Co., No. 1 Burnham, Ventura Co.	22- 5-18	3,050	testing
Standard, No. 1 Camarillo, Ventura Co.	29- 2-20	5,620	hd. sd. drilling
Petroleum Sec., No. 1 Diablo, Ventura Co.	26- 5-18	3,045	gr. sd. drilling
Parkford, E. A., No. 1 Strathern, Ventura Co.	5- 2-18	3,615	br. sh. drilling
Star Petroleum, No. 1 Canet, Ventura Co.	13- 3-23	5,240	fishing
Richfield, No. 27 Firu, Ventura Co.	35- 5-18	1,902	suspended
Milham Explt'n., No. 2 Buttonwillow, Kern Co.	8-28-23	4,662	gas well
Milham Explt'n., No. 3 Buttonwillow, Kern Co.	7-29-24	4,055	testing
Pacific Eastern, No. 1 Bakersfield, Kern Co.	6-30-28	4,392	will deepen
General Pet., No. 1 Edison, Kern Co.	5-30-29	1,980	hd. sd. drilling
Shell, No. 1 Mon Bluff, Kern Co.	3-28-28	1,964	sd. drilling
Kerwin & Seal, No. 1 Edison, Kern Co.	4-30-29	Rig	rigging up
Getty, George F., No. 1 Edison, Kern Co.	22-29-29	1,511	hd. sd. drilling
Mays & Valencia, No. 1 Machado, Kern Co.	31-30-28	Rig	rigging up
C. C. M. O., No. 1 Quinn, Delano	23-25-27	2,281	plug back
North American, No. 1 Wallace, Delano	5-25-26	716	sd. drilling
Sayers, R. H., No. 1 Poso, Kern Co.	7-26-18	Rig	rigging up
Fresno Madera Oil Co., No. 1 Clovis, Fresno Co.	18-12-21	3,781	hd. sd. drilling
Richfield, No. 1 Wreden, San Luis Obispo Co.	10-29-17	721	cemented
Shell, No. 1 Cowell, San Mateo Co.	8- 6- 5	4,511	hd. sd. drilling
Shell, No. 1 Ashton Craft, San Mateo Co.	17- 6- 5	2,500	suspended
Shell, No. 1 Murphy, Petaluma	29- 5- 6	6,360	hd. sd. drilling
Shell, No. 2 Murphy, Petaluma	8- 5- 6	1,140	reaming
Thomas & Hammill, Well No. 1, Alameda Co.	16- 3- 3	1,350	hd. sd. drilling
Elliott & Clarke, No. 1 Marcos, Santa Barbara Co.	3- 6-29	2,100	hd. sd. drilling
Becker, Geo. F., No. 1 Summerland, Santa Barb. Co.	33- 4-25	3,080	set pipe
Birch Oil Co., No. 1 Porterville, Tulare Co.	13-20-26	2,013	bl. sh. drilling
Union Oil Co., No. 1 Huasna, San Luis Obispo	26-32-15	....	location

ening it from 4,945 feet to the 5,200-foot level. The Superior's No. 1 Green came in flowing 1,050 bbls. from 5,179 feet several days ago but has dropped since completion to approximately 600 bbls., the decline in production being accompanied by a corresponding loss in gas pressure. The Associated failed to augment its daily production this week due to a wet job on No. 1 Bryant but with a little corrective work this well will probably be returned to production within 10 days. No. 16 Hellman, a deep test in the extreme part of the old field, does not look as though it will cause the Associated's field men any unexpected trouble as the present formation is running to a hard sandy shale at 5,856 feet.

Huntington Beach

Three new wells were finished in the Huntington Beach Field although one, the Standard's No. 12 Pacific Electric, was not actually turned loose. An early test is contemplated, however, and this well, together with three other projects on this lease, should be tanking oil shortly. The two new wells put on production were Brain & Rood's No. 1 Huntington, an 80-bbl. pumper from 3,683 feet and the Colonial Oil Co.'s No. 1, finished in the shallow zone at 2,112 feet, from which depth it registered an initial pumping of 95 bbls. of 14.6 gravity oil. In the older section the Standard shut in No. 30 Bolsa Chica, which came in last week making 85 bbls. of oil and around 5,000,000 feet of gas per day, and it will remain on the inactive list until pressure drops sufficiently to permit satisfactory pumping. The outstanding development in the Huntington Beach Field during the past month has been the number of outposts started to determine the possibility of opening up additional areas for work.

South of the field the Petroleum Securities is drilling ahead on the Mills property in an effort to develop a southern extension but so far no encouragement has been received. To the north, J. E. O'Donnell is attempting to develop production on Gothard property, northwest of the California Petroleum's Buck lease, which is edge property in the northern part of the old field. Havenstrite & Long are also attempting to develop production in this area and although their well has not yet got under way they are rigging up for an early spud on a lease a little less than a mile north of the Buck property. The Calnan Petroleum has a very important test on North Main Street in the eastern part of the field and the coring of 10 or 15 feet of fairly good sand at 4,450 feet has resulted in considerable leasing. The Loftin Oil Co.'s well in the rear of the Huntington Beach Inn in the eastern part of the town lot area is another rather interesting well under way at present because if commercial production is successfully developed drilling activities may be extended into the business district of Huntington Beach.

Dominguez

Completions in the Dominguez Field have been few and far between during the past year due to the policy of the Union & Shell in reducing drilling operations to an absolute minimum. A certain amount of work is necessary, however, to fill lease requirements and occasional completions are recorded from time to time. This method of operation was responsible for the completion of No. 19 Callender by the Union early in the past week and this new producer, which was drilled to 4,968 feet and finished with a 6¼-inch oil string, showed an initial of 550 bbls. of fairly clean 32.9 gravity oil. It must be remembered when comparing the initial production of new wells at Dominguez with those finished in other areas that there is a gentleman's agreement limiting the penetration to approximately 350 feet in the oil-bearing formation. Two separate and distinct horizons have been definitely proven up at Dominguez and a deep test, No. 17 Callender now under way, is still in the lower sand at 5,320 feet. This deep well is being drilled for the specific purpose of definitely ascertaining the possibilities of deep production and will probably not be allowed to remain on production after a preliminary test has been made, as the companies controlling the major portion of this field are developing it in a systematic manner and are proceeding according to well-established oil field practice, which, of course, precludes intensive drilling and the unnecessary waste of natural gas so evident in several other fields. The close watch and comprehensive study being given by the Union and Shell to the gas oil ratio at Dominguez guarantees maximum production, for without the propelling gas force more oil is left in the oil sand than is recovered. In addition to maintaining a level gas oil ratio, which prevents wastage of natural gas, the Shell and Union inaugurated the Marietta process of pumping dry gas into the oil sand more than a year ago. Concrete results are already in evidence, one of the best indications being the performance of individual wells holding up in excess of the anticipated normal decline.

Torrance

The Chanslor-Canfield Midway Oil Co. completed No. 79 Torrance, a few days ago flowing 200 bbls. of 17.8 gravity oil daily and incidentally brought its drilling program in the Torrance Field to a close, although it is possible that a few additional wells may be started from time to time. The new well finished this week was drilled to 3,709 feet and finished with an 8¼-inch oil string. A new producer was also chalked up at Inglewood and it likewise showed an initial output of 200 bbls. daily. This new well was the Brownmoor Oil Co.'s No. 7 Brown, which was drilled to 1,861 feet and finished with an 8¼-inch oil string carrying 300 feet of shop perforated. This company is contemplating redrilling and deepening No. 3 to the lower sand and may possibly secure commercial production, although this property is not any too favorably located with respect to structure. The Standard, with two new wells and several work-overs under way, successfully recompleted No. 19 on Vickers lease No. 1 as a 280-bbl. pumper after cleaning out to bottom, 2,603 feet. There is very little undrilled acreage in the Inglewood Field and most of the work being done consists of cleaning out and repair jobs incident to any field which has reached the pumping stage. In the Richfield district the California Petroleum Corp. closed the week by bringing in No. 9 Krug as a 155-bbl. pumper from 3,875 feet, the hole having been finished with a 6⅝-inch oil string.

Ventura

Two new wells were finished in the Ventura Avenue Field, although one, the Associated's No. 3 Hartman, failed to result in commercial production as the best it would do from 6,326 feet was 75 bbls. of oil which is cutting approximately 10 per cent water. In addition to the crude produced the well is making about 3,000,000 feet of gas daily. This well is not in a good mechanical condition and the company may possibly re-enter the hole and undertake corrective measures after the present gas pressure has subsided. The Associated's next completion looks like No. 50 Lloyd, which is being prepared for an early production test. It is quite evident this company contemplates some additional work soon as new rigs are going up for Nos. 100 and 102 on the Lloyd lease. The General Petroleum will also start several new wells, one of which, No. 2 Hisey, will undoubtedly be spudded in within a few days. In addition to starting this new work the General Petroleum began making preparations to complete No. 8 Notten, which looks fairly promising at 5,865 feet.

The Shell started off the week with a new producer on the Edison property and started rig construction for three new holes, all of which will undoubtedly get under way in the very near future. No. 15 Edison, the Shell's contribution to the field's list of producers, was an exceptionally good well as it came in under a natural flow making 1,875 bbls. of exceptionally clean 31.1 gravity oil daily from 5,900 feet. It is flowing under a pressure of 1,170 pounds and is yielding a little better than 3,000,000 feet of wet gas daily. The Petroleum Securities should have three new wells on production in the southern part of the field soon, one of which, No. 2 Willett, should be tanking oil soon. The Bolsa Chica Oil Co., operating in the northern part of the field, is making exceptionally good footage in No. 3 Hartman and the well is scheduled for completion along about October 15. During the past month this company produced 22,953 bbls. of crude and 126,247 gallons of casinghead at Ventura Avenue, notwithstanding a partial curtailment. In addition to the crude oil and casinghead produced, the company sold 37,384,000 feet of dry gas.

Kern River

Two new wells were put on production in the Kern River Field early in the week, the Chanslor-Canfield Midway Oil Co. bringing in No. 9 in Section 23-28-27 and the Standard, No. 8 in Section 15-28-27. Both came in on the beam, the former being rated at 200 bbls. daily from 2,299 feet and the latter 180 bbls. from 2,177 feet. The exceptionally large well finished by the St. Helens Petroleum in Section 26-28-27 a little over two weeks ago is still causing considerable speculation as it is holding up exceptionally well. It originally came in doing 465 bbls. per day and is still making 400 bbls., which is considerably higher than the average production of wells on the Kern front. The Associated and General Petroleum have inaugurated a rather aggressive drilling campaign in this area and both can be expected to list frequent completions during the next several months. These shallow wells, which range in depth from 2,000 to 2,500 feet on an average, are many times completed in from three to four weeks at a total cost of not to exceed $35,000. The principal factor which has been holding up drilling operations has been the low price prevailing for this heavy oil, which runs between 14 and 15 degrees.

Round Mountain

The Round Mountain Field, northeast of Bakersfield, is in somewhat the same position as Kern River in that the oil is of a heavy gravity and not particularly adapted for refining purposes at the present time. This oil has a rather low gasoline content but, on the other hand, is exceptionally rich in lub stock. There is no unusual shortage of this product, however, and as a result drilling operations have never really got under way. The Elbe Oil Co., under the personal direction of L. S. Barnes, who opened up this field, has designated its No. 6 in Section 20-28-29 as a conclusive deep test and drilling operations have already been resumed. This well was reported down 2,540 feet several days ago, the prevailing formation being a hard shell. Drilling operations subsequent to completion to the discovery indicates that the Elbe Oil Co. has practically all of the most favorable acreage tied up. This is evidenced by the fact that the St. Helens Petroleum failed to develop commercial production in Section 13-28-28 while the L. & B. Producing Co. has not fared any better in Section 19-28-29.

With drilling operations in the Midway-Sunset area practically at a standstill there was very little of interest to report in that area during the past week with the exception of the Empire Gas & Fuel's No. 1 in Section 4-11-23. Production of this well had declined to such an extent the company found it necessary to clean out the hole in an effort to stimulate production. The tubing was no sooner pulled than the well blew half way up to the crown block and came in flowing at the rate of 2,000 bbls. a day. Production settled a short time later to 1,200 bbls. of oil and approximately 2,000,000 feet of wet gas.

Northern California Wildcats

The Pacific Eastern Production Co. is still endeavoring to finish its Casa Loma, or Union Avenue test at Bakersfield in Kern County, but this wildcat has steadfastly refused to be tamed for some reason or other. It has been several months now since the company first cored the oil sand but, notwithstanding persistent strenuous efforts to secure production, the well is as wild as ever. The hole was swabbed dry several days ago and made a little live oil but did not have any kick whatever. Very little gas was present and it is generally believed the heavy muddings made necessary from time to time to prevent it from running wild have probably mudded off present possibilities and may force the company to deepen or drill an entirely new hole. The Milham Exploration Co. is spending a good deal of time and effort in developing commercial gas production some 2 miles northeast of Buttonwillow in Kern County and while one of the company's tests has been flowing from 3,000,000 to 5,000,000 feet of dry gas daily for a month or so, a troublesome water condition has been hampering work.

The Shell completed one of the most important lease transactions last week by tying up 400 acres of possible oil land on top of the Sim Dome in Ventura County and field dispatches indicate that the company agreed to begin actual drilling within 30 days. The property was acquired from Ralph Lloyd and while shallow production is almost assured the Shell is playing for the possible deep sand.

Southern California Wildcats

The Associated's No. 1 Cypress at Potrero, which is located midway between the Rosecrans and Inglewood fields, is still the most interesting wildcat project in southern California regardless of the fact that the company failed to secure commercial production on a recent production test. Preparations are being made to deepen the hole a little and it will undoubtedly be given another try within a few weeks. The Monterey Park Petroleum Co.'s No. 1 Browning at Monterey Park, has taken on a rather interesting aspect due to the showings of numerous gas bubbles on the ditch and while there have been no appreciable oil indications logged to date this well may bear watching a little later on. Charles A. Son's No. 1 Pinkerton, south of Santa Ana River in Orange County, was down 1,973 feet a few days ago.

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Commodity—	Total This week	Daily Average	Total Last week	Daily Average	This year to date	Same time last year
Crude oil	149,069	21,296	156,429	22,347	7,255,235	9,140,696
Fuel oil	149,487	21,355	100,808	14,401	5,570,124	5,099,537
Diesel and gas oil	148,144	21,163	233,221	33,317	2,150,213	2,124,543
Gasoline	343,099	49,014	250,533	35,790	6,380,922	5,007,542
Tops	.....	.....	.....	.....	.....	223,156
Coastwise—						
Crude oil	468,641	66,949	.....	.....	18,398,232	16,957,724
Fuel oil	281,225	40,175	469,368	67,053	8,743,261	7,715,251
Diesel and gas oil	19,695	3,242	82,952	11,850	295,352	147,411
Gasoline	126,073	18,012	.....	.....	6,502,260	5,265,273
Kerosene	.....	.....	.....	.....	137,475	148,747
Tops	.....	.....	.....	.....	104,595	476,912
Exports—						
Crude oil	44,179	6,311	586,222	83,746	1,818,261	3,051,153
Fuel oil	575,310	82,173	182,253	26,036	19,454,185	12,298,516
Diesel and gas oil	27,650	3,950	3,579	511	928,922	274,767
Gasoline	341,048	48,721	192,218	27,603	3,331,423	3,273,538
Tops	.....	.....	45,920	6,560	227,204	.....
Kerosene	.....	.....	.....	.....	1,551,344	2,061,932

TANKER SHIPMENTS, SAN FRANCISCO TO ATLANTIC AND GULF COAST PORTS

Fuel oil	.....	.....	.....	.....	.....	78,653
Diesel and gas oil	91,550	13,079	.....	.....	597,158	1,295,118
Gasoline	.....	.....	77,629	11,089	1,418,705	774,976
Tops	.....	.....	.....	.....	.....	73,698
Lubricants	.....	.....	.....	.....	303,016	275,228
Coastwise—						
Fuel oil	.....	.....	7,915	1,131	3,841,110	3,779,846
Diesel and gas oil	.....	.....	.....	.....	207,012	.....
Gasoline	146,671	20,953	114,972	16,425	3,664,995	3,380,156
Kerosene	4,518	645	.....	.....	156,490	268,433
Exports—						
Fuel oil	74,681	10,669	.....	.....	2,132,752	2,674,118
Gasoline	69,532	9,933	83,500	11,929	2,215,261	1,393,389
Kerosene	.....	.....	.....	.....	592,987	1,462,297
Lubricants	.....	.....	.....	.....	18,370	26,810

Southeastern New Mexico High Point

With Northwestern Colorado Most Interesting in Rocky Mountain Area. Purchases of Acreage in Lea County

By Tolbert R. Ingram
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., Sept. 24.—Southeastern New Mexico and northwestern Colorado afforded the high points of interest in the news of the Rocky Mountain area for the week. Major companies have been active in acquiring leases on the few tracts available close in to the Texas Production Co.'s No. 1 Rhoades in Lea County, which is giving favorable indications of yielding some important results at an early date, and making extensive surveys of the district with geophysical instruments as aids in locating promising highs. Leasing is taking place on a considerable scale in the southeastern corner of the state and extensive trading in royalties along the east line of Lea County is reported. The starting of several new tests in that area has had considerable influence on the situation.

In northwestern Colorado, the Texas Production Co.'s No. 2 Parkinson on the Iles Dome is making oil from the Morrison sand and the same company has a good showing in the shale in its No. 5 Wick on the Moffat Dome at a horizon where nothing was expected. Both the Iles and Moffat Domes appear to be scheduled for considerable drilling as a result of recent developments. Two good wells are reported in the extensions of the old Florence Pool in Fremont County. The Sundance sand at Tow Creek, in Routt County, proved to be too deep to be reached in the Texas Production Co.'s No. 3 Belle Dennis, which is being abandoned. Two tests drilling in the Denver Basin have reached a stage which shows that the Dakota is very deep and will require large investments for testing.

Wyoming reported a 477-bbl. well in the Lakota sand in Salt Creek in the Midwest Oil Co.'s No. 13-L, and several smaller wells, a gas well in Buffalo Basin for the Midwest Refining Co. making better than 15,000,000 feet, and the starting of several important tests, one of these being on the Baxter Basin structure in Sweetwater County, and the other on the Garland Dome in the Big Horn Basin.

Utah had one failure and one new test that will seek the source of oil showing in the Sundance on the Colorado side of the line.

New Mexico

Southeastern New Mexico is receiving considerable attention not only on account of developments in several of the test wells which have reached interesting stages, but as a result of new wells being started in areas subjected to the most intense investigation by geological departments in which the torsion balance and the magnetometer have been brought to their aid.

The Texas Production Co.'s No. 1 Rhoades, SE NE NW Section 22-26-37, in Lea County, south of Jal, figures extensively in the situation. This well reached the top of the brown gas sand at 3,105 feet several weeks ago and 2 feet into the sand made 16,000,000 feet of gas. The flow of gas then dropped back to 14,000,000 feet and the hole was reported spraying some oil. This subsequently proved to be incorrect and is thought to have originated from noticeable condensation in the lead line. The hole was then drilled an additional 25 feet, apparently through gray lime with brownstone partings, and at 3,131 feet it encountered more gas. The tools were blown up the hole several hundred feet and the drilling line was broken. It is estimated that the gas flow increased 3,000,000 to 4,000,000 feet when the lower sand was struck, but it is not yet apparent whether this came from a pocket or was shut off by the tools, as the volume of gas soon dropped back to where it was before the horizon at 3,131 feet was drilled into. Fishing now is in progress in an effort to recover the tools.

No. 1 Rhoades is 4 miles north of the Llano Oil Co.'s No. 1 Scarborough in Section 12, Block C-22, in Winkler County, Texas, which picked up the same sand at 3,041 feet and had 43 feet of it to 3,084 feet. The Scarborough well was 8 feet into the sand before there was any gas noticed and when it did come it proved to be a pocket and was soon exhausted. The two wells are proving to be very near the same structural elevation, the surface elevation of the Llano well being 2,953 feet, and of the No. 1 Rhoades, 2,988 feet.

Acreage Purchased

Practically all the acreage in the vicinity of No. 1 Rhoades is held by the major companies and very few tracts are obtainable. However, several of the major companies have been picking up such protection acreage as could be secured. The Amerada Petroleum Corp. is reported to have purchased several small pieces for which it is said to have paid $100 an acre. One of these is the north half of NE Section 16-26-37. This company is said to have paid around $200 an acre for another 40-acre tract, but the description of this tract was not obtained. The Empire Gas & Fuel Co. is known to have been dealing for some tracts, but if they are secured it is expected that they will cost at least $100 an acre. The purchase of leases in the southeastern corner of the state not so close to the drilling wells also has been going on extensively during the past few weeks. The Texas Production Co. is reported to have acquired three tracts of 160 acres each; J. S. Cosden Co., five tracts of 160 acres and one of 320 acres; Empire Gas & Fuel Co., two tracts of 160 acres; Midwest Refining Co., five tracts aggregating 640 acres; Gypsy Oil Co., one tract of 320 acres, and the Amerada Petroleum Corp. 25 tracts aggregating 4,580 acres. Prices varied all the way up from $1.50 an acre, depending upon location.

There is also considerable dealing in royalties in Townships 18 to 20s, Ranges 38 and 39e, and Townships 21 and 22, Ranges 37 and 38, along the center of the east line of Lea County, due largely to the beginning of operations on the Bordages test in Section 27-19s-38e, and the Midwest Refining Co.'s test in Section 9 in the same township, and rumors that the Texas Production Co.'s No. 1 Lockhart, Section 5-22-38, is believed by several of the major companies to be very favorably located.

Bordages Test

The contract has been let to Conrad & Kersey for the Bordages test which will be known as No. 1 State, center of east line of the SW Section 27-19-38, near Nadine, in Lea County. The contracting firm drilled No. 1 State for the Caprock Oil & Gas Co. on the east side of the Cap Rock. Tools are now moving to location. The block contains about 5,000 acres and seven spreads have been laid, out of which five have been sold, the purchasers being the Midwest Refining Co., Humble Oil & Refining Co., Texas Production Co., Roxana Petroleum Corp. and the Amerada Petroleum Corp. About 100 acres were sold to individuals in small tracts and the contractors took 400 acres. The acreage was sold on a guarantee of a 4,000-foot well.

The Midwest Refining Co.'s No. 1 State, NE cor. Section 9-19-38, location of which was announced last week, is moving in tools and equipment from the abandoned test on the Frio Dome in Quay County. Announcement that this well would be drilled has had much to do with royalty trading which is taking place. The company is said to have 3,000 acres in the block and has continued to purchase a few small tracts near the block. The location is on state land. The geological department of the company has been at work for some time in that area and has made a number of geophysical surveys in working out the highs, the torsion balance and the magnetometer being among the instruments used.

Geophysical Surveying

Geophysical surveying is being done quite extensively in that region at present. The Roxana Petroleum Corp. had a party of 10 men making torsion balance surveys in the area south of Lovington, in Lea County, and at last reports was in camp about 8 miles northeast of Jal. It is understood the surveys are extending over into Texas. The Gulf Refining Co. has a similar party now in camp at Jal, and the Midwest Refining Co. has a party in eastern Lea County. Several other companies have been doing similar work.

Texas Production Co.'s No. 1 Jackson, SE cor. Section 4-20-34, Lea County, is drilling below the salt at 3,460 feet. Same company's No. 1 Lockhart, Section 5-22-38, is drilling at 2,880 feet, and its No. 2 Robinson, NW cor. SW, Section 25-16-31, same section as No. 1 Robinson, recently completed as a gas well, is spudding at 50 feet. The Exploration Co.'s No. 1 Record, NE Section 25-19-35, has reached its contract depth of 4,000 feet and is bottomed at 4,005 feet waiting for orders to drill deeper. Inglefield & Bridges' No. 1 State, SE cor. Section 4-17-34, is drilling in broken lime at 4,991 feet.

In Chaves County, Texas Production Co.'s No. 1 Wilson, Dunken Dome, Section 29-17-18, is drilling at 4,517 feet.

Colorado

The tests to the Sundance sand below the Dakota continue to hold first place in Colorado with the outcome of several wells in Moffat and Rio Blanco County being eagerly awaited. The principal development of the week was the finding of oil in the Morrison sand in the Texas Production Co.'s No. 2 Parkinson, NW Section 23-4-92, on the Iles Dome. The test is about three-fourths of a mile north and a little east of the Midwest Refining Co.'s No. 18 SD Parkinson, which had gas in the Morrison. This horizon lies below the Dakota and above the objective Sundance. No. 2 Parkinson entered the Morrison at 3,284 feet and commenced making oil. It was drilled to 3,288 feet when the hole commenced to cave. The oil continued to increase until it went over the top. The first flow was at the rate of about 250 bbls. a day. On September 20, it flowed 130 bbls. and the next day 90 bbls., the oil coming through the cave at the bottom. A string of 6¼-inch casing with perforated joints is being run and, as soon as this is set and the hole cleaned, a production test will be made.

This well is lower on the structure

(Continued on Page 158)

ROYALITE NO. 7 IN TOP OF MADISON AND NOW DRILLING AT 4,145 FEET

By Victor Lauriston
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, Sept. 24.—In the Turner Valley Field southwest of Calgary, Royalite Oil Co.'s No. 7, LSD 3, Section 13-20-3w5, is reported to have got the top of the Madison limestone around 4,140 feet. It is now drilling at 4,145 feet. As soon as the formation is definitely identified, casing will probably be cemented in the top of the lime preparatory to drilling into production. Royalite Oil Co.'s No. 8, LSD 9, Section 11-20-3w5, is drilling at 989 feet. Royalite No. 9, LSD 6, Section 13-20-3w5, is reported to have spudded in.

Dalhousie Oil Co.'s No. 1, formerly Southern Alberta No. 1, flowing well, LSD 4, Section 18-20-2w5, which is being drilled deeper, has been cemented on top of the Madison limestone at 4,211 feet. Dalhousie No. 5, LSD 16, Section 30-19-2w5, is producing through the 2-inch tubing from the oil horizon in the Fernie shales at 4,549 feet. Dalhousie's No. 6, LSD 10, Section 13-20-3w5, is at 4,464 feet and drilling.

Foothills Oil & Gas Co.'s No. 1 formerly Imperial-Millarville No. 1, SW, Section 26-20-3w5, is at 2,105 feet and drilling. Home Oil Co.'s No. 2, formerly Advance Oil Co.'s No. 2, LSD 14, Section 20-19-2w5, recently taken over by the Imperial Oil, Ltd. interests, is being repaired in preparation to resume drilling at 2,002 feet. The Dakota sand at this depth gave a fair show of oil, but the test will probably be carried to the Madison limestone.

The recently organized Foothills Oil & Gas Co. an Imperial Oil, Ltd. subsidiary formed to operate in the north end of the Turner Valley Field, is reported to be acquiring additional acreage. Transfer of the Owen Bryant lease in LSD 11, Section 34-30-3w5, and of the Pat Treanor lease of 280 acres in the east half of the same section, has been completed. It is reported that one of the Imperial subsidiaries is negotiating for further acreage in the neighborhood of the Home Oil Co.'s No. 1 producer, LSD 10, Section 20-19-2w5. Alberta Pacific Consolidated, Ltd. of Calgary, which holds a one-eighth royalty on the Home acreage, has 80 acres additional in this vicinity.

McLeod Oil Co.'s No. 1, LSD 16, Section 1-20-3w5, is at 2,425 feet and underreaming. McLeod's No. 3 producer, same LSD, has recovered the lost tubing and is reported to be again pumping from the Dakota sand horizon at 3 200 feet.

Spooner Oils No. 1, LSD 12, Section 13-20-3w5, is at 4,612 feet and shut down waiting for casing, which is held up by bad roads. Vulcan Oil's No. 2, LSD 11, Section 13-20-3w5, is drilling in the lower Kootenay horizon at 3,575 feet.

Seneca Oils, LSD 1, Section 34-20-3w5, has finished running 10-inch casing and resumed drilling at 2,706 feet. Sentinel Oil Co., Section 8-20-2w5, is drilling at 1,950 feet.

New Valley Oil Co., LSD 4, Section 6-21-2w5, is at 2,050 feet and drilling. Oil burners have been installed to operate the plant, and will run on fuel oil from the Canada Southern refinery in the Turner Valley. The Black Diamond coal mine, from which the New Valley secured its fuel, recently shut down, and road conditions made the hauling of coal from more distant points uncertain.

Calmont Oils, LSD 2, Section 1-20-

(Continued on Page 162)

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Pierce Junction Pool Gets Good Well

Edgerly Pool in Louisiana Also Gets Better Than Average Producer. Production Stationary; Few Completions

By Staff Correspondent

HOUSTON, Tex., Sept. 24. — While production of the Gulf Coast region remained at the same level during the past week as during the previous seven-day period, there were only a few completions reported and only two of those wells were completed with production of more than 1,000 bbls. Anderson and Plummer's No. 1 Whitehead was the big well of the week and was completed flowing 1,800 bbls. It was in the Pierce Junction Pool near Houston. That pool was extended 400 feet to the northwest a few days ago by Leonard Petroleum Co.'s No. 1 Gilmore, which came in making 1,700 bbls. of pipe line oil that tested 28.2 corrected gravity. The extension well is holding up well and is expected to stimulate drilling in that immediate area.

The other big well of the week was in the Edgerly Pool in Louisiana. It was Rex Petroleum Corp.'s No. 7 Hunter and made 1,000 bbls. at 3,760 feet. Edgerly continues to be one of the active spots in Louisiana from a standpoint of trading. Recently The Texas Company made a big purchase in that area and more deals are reported to be in the making.

In the Boling shallow field in Wharton County, Texas, a handful of shallow completions was reported. The northwest extension of the Batson Pool in Hardin County is not holding up as expected. The well was No. 8 Hodges and came in flowing 400 bbls. from 3,435 feet, but dropped off the second day to 250 bbls. and has been steadily declining.

The Texas Company will make another attempt to find production at Davis Hill, an old known dome. It is estimated that around 75 wells have been drilled in the immediate vicinity of that dome in the search of production, but without results. The Texas Company's test will probably be located on the John Habard lease.

Will Test Big Area

In Houston County, The Texas Company abandoned its shallow test south of Lovelady at around 1,000 feet. The company, it is reported, plans to drill a few more core tests in that general area and then drill another test. To the southeast and in Polk County, Tonner and Purdee have an 8,000-acre block centering around the E. L. Duke 59-acre tract in the Menord League. It is reported those operators took the block on a drilling obligation and are moving in a rig to the southeast corner of the 59-acre tract for a test.

Two miles northeast of Cleveland, in Liberty County, F. C. Barlow is making arrangements to resume drilling at No. 1 Whitan, Section 100, H. & T. C. Survey, which has been shut down for some time in gumbo at 1,250 feet. An increase in activity around Barbers Hill in Chambers County was revealed in the number of new locations being reported there.

Seismograph crews—sometimes known in the Gulf Coast region as the gentlemen with ringside seats to earth quakes—are very active in the various Gulf Coast regions, especially in the Louisiana areas. Calcasieu Oil Co. has a crew working in Acadia Parish. A survey is being made in the Jefferson Island area in Iberia Parish, while a geophone crew is making a survey of Vermillion Bay.

A torsion balance crew is working in and around Lake Boeuf in La Fourche Parish and a seismograph crew is surveying the Busgrove plantation in Township 15, Range 17. Another crew is making a survey of lands near Bunkie in St. Landy Parish and a seismograph crew is surveying around the town of Sawtelle. Another crew is working in another part of that parish. In St. Charles Parish a crew is shooting near Luling and a geophone crew is surveying near Franklin in St. Mary Parish, while another crew is working at Grand Lake.

In the Texas Gulf Coast area the activity is not as great as it is to the east. Crews are working in widely scattered areas. One company is reported to have a crew at Angleton, in Brazoria County. The crew will be more of a school crew and will work on known domes.

Production Shows Gain

Production in the Gulf Coast region was practically stationary during the past week. One of the late completions of the week was Gulf Production Co.'s No. 8 Jeanette Mann, in Spindletop, which came in flowing 320 bbls. at 4,160 feet. The oil has been increasing daily in volume and now the well is making 635 bbls. of 30.9 gravity crude daily.

Production by pools in the Gulf Coast region, East Central Texas and Southwest Texas follow:

Gulf Coast	
Spindletop	58,232
Saratoga	1,126
Batson	1,409
Goose Creek	7,827
Sour Lake	4,487
Hull	14,798
Big Creek	3,091
Columbia	10,242
Humble	3,850
Pierce Junction	7,846
Blue Ridge	4,373
Markham	250
Orange	4,903
Damon Mound	910
South Dayton	220
South Liberty	2,331
High Island	117
Moore's Field	42
Boling	2,235
Nash Dome	1,330
Barbers Hill	900
Vinton	4,915
Starks	760
Edgerly	2,699
Evangeline	1,784
Lockport	5,138
Lareauville	51
Sweet Lake	95
Sulphur	20
Total	145,576
Total last week	145,556
Difference	20
East Central Texas	
Mexia	9,569
Cedar Creek	425
Nigger Creek	1,985
Currie	625
Wortham	2,766
Richland	744
Powell	14,669
Total	30,783
Southwest Texas	
Somerset	2,387
Lytton Springs	1,777
Dale	845
Luling	16,470
Miscellaneous	9,690
Total	30,869

Fort Bend County

Navarro Oil Co.'s No. 2-B Robinson, in the Blue Ridge Pool, was worked over and completed as a 2,000,000-foot gas well and No. 3-B is drilling at 2,300 feet. Gulf Production Co.'s No. 15 Bassett C had a showing of oil at 2,970 feet, but is drilling ahead at 3,125 feet. Same company's No. 16-C is being rigged and No. 12 West Schenck is being rigged. J. S. Abercrombie & Co.'s No. 3 Robinson was completed at 3,777 feet and is making 600 bbls. on air. Location has been made for Cunningham Production Co.'s No. 2 Blakely, in Blue Ridge.

In Big Creek the Gulf Production Co.'s No. 35 T. W. Davis, an old well being drilled deeper, is drilling at 3,950 feet. At Boling Dome the bit was twisted off at 2,730 feet at Sun Oil Co.'s No. 3 J. R. Farmer. After sidetracking at 2,181 feet, the hole is being drilled ahead at 2,390 feet. Same company's No. 2 on that lease topped the cap at 1,091 feet and is drilling ahead. At Long Point, the Gulf Production Co.'s No. 1-A Beard is drilling at 3,000 feet. No. 4 Trone is drilling at 2,000 feet and No. 4 Wolf topped the cap at 866 feet. At Nash, the Rycade Oil Corp. is knocking out a bridge at 4,089 feet at No. 16 Wisdom. No. 17 on the same lease is drilling at 2,000 feet. No. 5 Fritz Meier is drilling in gumbo at 3,860 feet and No. 4 on that lease was in hard sand at 4,160 feet without a showing. The plug at 3,835 feet is being drilled at Gulf company's No. 13 Moore, in Orchard.

Hardin County

Orange Petroleum Co.'s No. 4 Merchant is the only well drilling in Sour Lake, and it is drilling at 850 feet. In Batson, Charles G. Hooks' No. 1 Le Jarza tested salt water in gumbo and boulders at 1,375 feet and was abandoned. The Texas Company's No. 1 R. S. Sterling is sidetracking at 2,798 feet, total depth 3,748 feet. Ada Belle Oil Co.'s No. 116 Honeymoon was dry at 900 feet and is to be deepened. Paraffine Oil Co.'s No. 70 Paraffine is being put on the pump at 975 feet. Batson Oil Co.'s No. 5 Bates is a 5-bbl. pumper at 475 feet.

Harris County

Anderson and Plummer's No. 1 Whitehead is flowing 1,800 bbls. of oil from 4,475 feet, Rio Bravo Oil Co.'s No. 2-B is drilling at 3,575 feet; No. 6-B is drilling at 950 feet and No. 6 P. S. A. is drilling at 3,550 feet, all in the Pierce Junction Pool. Navarro Oil Co.'s No. 3 Cain, in the same area, is drilling at 3,050 feet. Location has been made by Smith and associates for No. 1 Humble fee. Cullen and associates' No. 8 Howe is drilling at 4,350 feet. Gulf Production Co.'s No. 21 E. R. Taylor is drilling at 2,175 feet and No. 1 H. M. Perry is drilling at 700 feet. Moody Corp.'s No. 2 Hume is drilling at 500 feet and location has been made for Associated Oil Co.'s No. 1 Boyle, in Pierce Junction.

In Goose Creek, the Port City Oil Co.'s No. 1 Grace Adey is shut down at 1,590 feet. A fishing job at 3,000 feet is delaying progress at Southern Exploration Co.'s No. 7 Freeman. Gulf Production Co.'s No. 14 Chapman Bryan is drilling at 5,425 feet; No. 8 Hoffman Gaillard is drilling at 2,450 feet and No. 11 State Land is to be drilled deeper and No. 26 Ashbel Smith is being drilled deeper at 4,775 feet. Humble Oil & Refining Co.'s No. 72 Simms-Smith will be deepened from 4,460 feet and No. 4 Ashbell-Smith is being rigged to drill deeper.

At Hockley, the Humble Oil Co. and Marland Oil Co.'s No. 1 Warren topped the cap rock at 4,138 feet and is drilling cap at 4,150 feet. Gulf Production Co.'s No. 1 Burt Griffith is drilling at 4,400 feet. Twelve miles northeast of Houston, P. S. Griffith's No. 2 fee is shut down in gumbo at 3,517 feet. Jaunita Oil Co.'s No. 1 Kitsman is shut down in gumbo at 1,175 feet 3 miles northeast of Cypress.

Houston County

The Texas Company's No. 1 H. Kempner, 1 mile south of Lovelady, was abandoned at 980 feet. Porter and associates' No. 4 Austin, 1 mile south of Crockett, is shut down in shale at 3,950 feet.

Jefferson County

In Spindletop, the Rio Bravo Oil Co.'s No. 3 T. & N. O. was the only completion and it came in flowing 700 bbls. at 4,000 feet. Same company's No. 58 T. & N. O. is to be drilled deeper. Hines Brothers' No. 1 Weed is being washed to the bottom at 5,050 feet. Sun Oil Co.'s No. 12 McLean is drilling at 5,150 feet; No. 7 McLean is drilling at 4,350 feet; No. 11 is a derrick; No. 6 is drilling at 5,500 feet; No. 14 McLean is drilling at 5,700 feet and No. 4 Price is drilling at 4,250 feet. Magnolia Petroleum Co.'s No. 5 fee is being delayed by a fishing job at 4,400 feet; No. 6 fee is drilling at 5,325 feet. The strainer was set and Magnolia company's No. 2 fee-A is being bailed. J. O. Davis' No. 2 Gladys is drilling at 5,010 feet. Gulf Production Co.'s No. 12 Oakwood Realty Co. is being put on the pump at 5,575 feet. Gulf company's No. 16 Marrs McLean A is being rigged. Gulf company's No. 226 Gladys is drilling at 525 feet No. 11 Marrs McLean A is drilling at 4,975 feet and No. 6 Oakwood Realty Co. is to be drilled deeper. Four miles northeast of Spindletop, Deep Test Oil Co.'s No. 1 McFaddin is sidetracking at 2,165 feet. A rig is up for Gulf Production Co.'s No. 4 Bordages at Fanette. Five miles northeast of Port Arthur, Jim McMurry's No. 1 Crosby is drilling at 2,030 feet.

Liberty County

At Hull, the Republic Production Co.'s No. 54 Dolbear flowed 1,100 bbls. from 2,230 feet. No. 99 Dolbear is to be drilled deeper and No. 45 is drilling at 2,350 feet. The Texas Company's No. 5 Hannah-Vacuum is drilling at 3,440 feet and location has been made for No. 7 Hannah-Vacuum. The Texas Company's No. 7 Merchant is drilling at 2,750 feet. Location was made for Gulf Production Co.'s No. 87 Phoenix Development Co.'s No. 29 Phoenix Development Co. is being bailed at 3,625 feet. Gulf company's No. 11 W. L. Thomas fee is drilling at 3,050 feet. Location was made for Empire Gas & Fuel Co.'s No. 27 Barngrover.

At South Liberty, the Navarro Oil Co.'s No. 10 Harrison is setting a strainer at 3,450 feet. At North Dayton, the Harrison Oil Co.'s No. 2 Quintette is drilling gumbo at 2,670 feet. Titwell and associates' No. 1 Gardner, 5 miles east of Davis Hill, is shut down in gumbo at 3,508 feet. Operations are being resumed at Barlow and associates' No. 1 Minchcliff, 5 miles northeast of Cleveland, which has been shut down in gumbo at 1,520 feet.

Montgomery County

Brains and associates' No. A-1 Fitch is drilling at 2,364 feet. The well is 3 miles northwest of Spring. West of Pinehurst, Cordell and Lynn's No. 1 Nichols is drilling at 1,155 feet.

Matagorda County

Gulf Production Co.'s No. 3 Sanborn, at Hawkinsville, is drilling at 4,572 feet. At Markham, the Rycade Oil Co. and Humble company's No. B-2 Kountze drilled down to 4,033 feet in salty shale. Rycade Oil Co. and Houston Gulf Co.'s No. 2 Sisk at Markham is to be abandoned at 2,376 feet. At Bay City, Matagorda County Co.'s No. 1 Hawkins is drilling shale at 2,000 feet.

Orange County

In the Orange Pool, Sun Oil Co.'s No. 2 Brown is to be deepened. Rycade Oil Corp.'s No. 11 State-B is drilling at 3,150 feet. Texhoma Oil Co.'s No. 16 Chesson is drilling at 3,350 feet and No. 8 Chesson is being put on the pump at 3,050 feet. Brownie Babbittee Oil Co.'s No. 1 Peveto is drilling salt water sand at 2,800 feet. Sinclair Oil & Gas Co.'s No. 4 Granger is drilling at 3,300 feet. A strainer is being set at Gulf Production Co.'s No. 15 Lee Hager, which was bottomed at 4,775 feet.

Brazoria County

Associated Oil Co.'s No. 1 Seaburn had salt at 4,150-56 feet and backed up to test at 3,927 feet. At that depth the well tested salt water and was abandoned. Roxana Petroleum Corp.'s No. 4 Allen is drilling at 5,200 feet; No. 1 Randon is a rig; No. 2 Bell is drilling at 2,400 feet and had a showing of oil between 1,900 and 1,903 feet; and No. 1 Schepler is drilling at 2,000 feet. Starks and associates' No. 3 Hincle is drilling at 2,000 feet. Rycade Oil Corp.'s No. 12 Nash is drilling hard dry sand at 5,746 feet. Location has been made for Gulf Production Co.'s No. 3 Perry. West of West Columbia, Danciger Oil Co. is making location for No. 1 Carrie Bartlett.

Wharton County

In the Boling shallow field, Gulf Pro-

(Continued on Page 162)

ETNA

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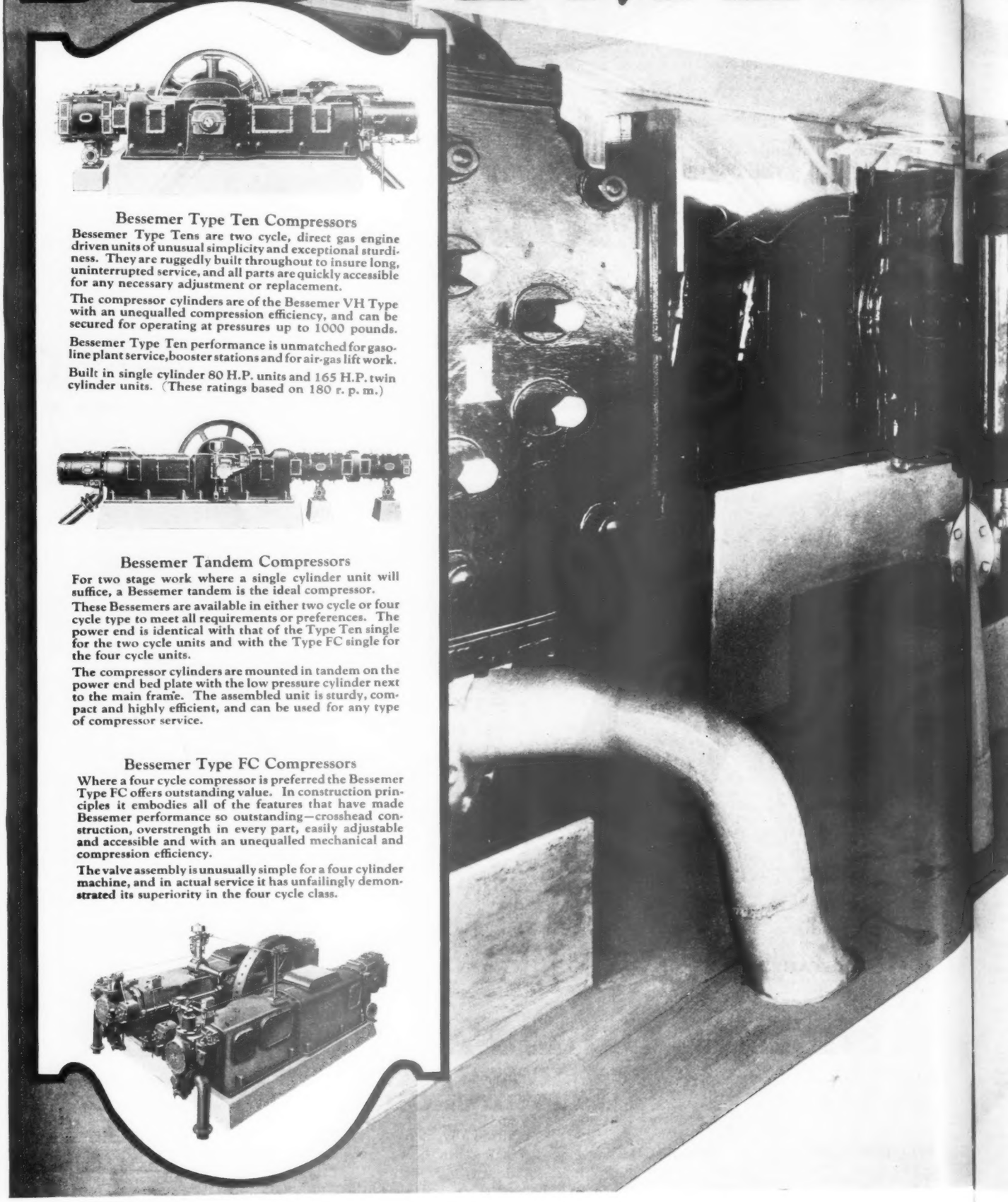
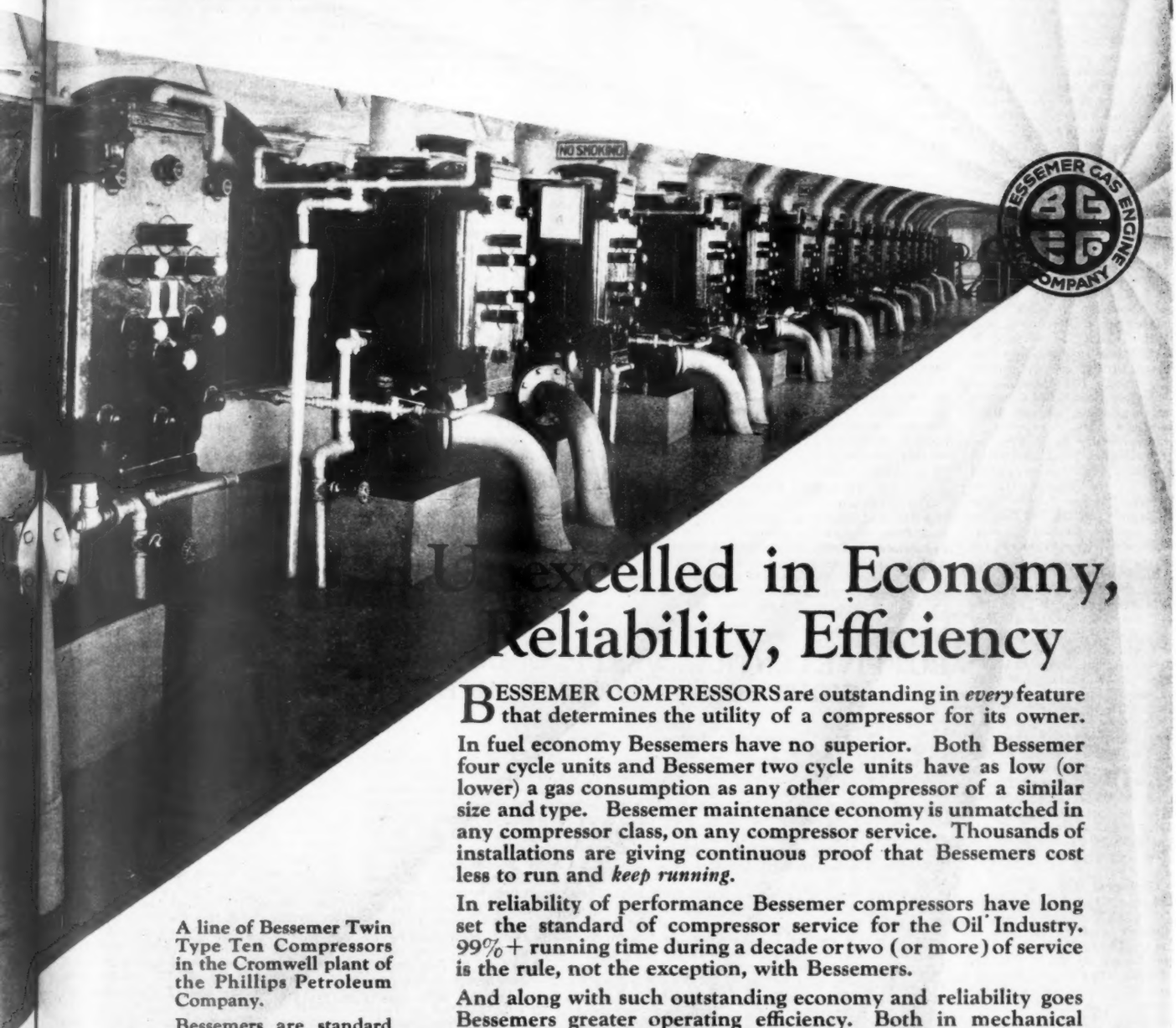


COMPRESSORS



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Good Producers in Ambrose Pool, Ky.

Three Over 200 bbls. Sunnydale Pool Has 60-bbl. Well and Daviess County 75-bbl. Producer. Wildcatting Active

By Whit
Staff Correspondent, Kentucky-Tennessee

GLASGOW, Ky., Sept. 24.—Completions reported from Kentucky fields during the past week were confined exclusively to the western division of the State, the eastern portion failing to announce any new wells brought in, although a few are close to being completed. Ohio County as usual leads in new production, owing to the good wells being found in the Ambrose Pool, and its extensions. The third well on the Cora Wells farm, to the west of the Ambrose Pool property, is a 250-bbl. initial producer, while Nos. 15 and 16 on the Mary Elmore farm are initial producers good for 200 and 302 bbls., respectively. The Sunnydale Pool, also in Ohio County and a few miles southeast of the Ambrose Pool, comes to the front with a 60-bbl. producer on the Renfrew farm, and wells of this caliber in advance of big production, brings about an active leasing campaign further in the interior and along the Rough River section of the county. Daviess County also reports a 75-bbl. initial producer on the Miles farm, in the Roby Pool, southwest of Pellville. Numerous dry holes were recorded from the Glasgow Field, in Barren County, others being gas or average sized oil producers. In the Bowling Green Field of Warren County a very light pumper was found on the McLemore lease, the four counties mentioned covering the completions reported since the last report.

Big Production

Six leases in the Ambrose Pool, consisting of wells on the Fannie Lake 100 acres, Romie Taylor 58 acres, D. A. Gray 80 acres, Cora Wells 130 acres and the O. Ezell 130 acres, for six days production amounted to close around 17,500 bbls., the largest producing leases of those mentioned being the Fannie Lake, Mary J. Elmore, Romie Taylor and Cora Wells farms.

The daily production from the four farms averaged as follows for the six-day period: Fannie Lake, 1,060 bbls.; Mary J. Elmore, 1,000 bbls.; Romie Taylor, 520 bbls., and Cora Wells, 240 bbls. The figures are given to show what causes the unusual activity in the Ambrose Pool and its vicinity, as the oil is found at depths close to 700 feet, and with rather inexpensive drilling.

Geological Map

Dr. Willard Rouse Jillson, director and state geologist of the Kentucky Geological Survey, announces that a new map of surface structure of the Bells Run anticline, in Ohio County, by W. C. Eyl, has just been released. The map is in color, with pools marked, covering an area north and south from the King Pool to the north to the Rough River fault to the south and covering quite a large area of Ohio County, east and west.

Week's Work

A summary of the week's work in the Kentucky Field shows 28 completions, 17 producers with an initial production of 1,161 bbls., 10 dry holes and 1 gas well. Compared with the previous week, there were 20 more completions, 10 more producers, 736 bbls. more production, 9 more dry holes and 1 more gas well. The wells were distributed by counties and districts as follows:

County—	Oil Comp.	Wells	Prod.	Dry	Gas
Ohio	11	8	1,032	3	0
Barren	14	6	49	7	1
Daviess	2	2	77	0	0
Warren	1	1	3	0	0
Total	28	17	1,161	10	1
Last week	8	7	425	1	0
Difference	20	10	736	9	1

Western Kentucky

Wildcatting prevails over a wide area of the western division, as some of the older companies and a number of newcomers are taking advantage of a good drilling season and the low price to explore all likely territory. Drilling is in progress in Ohio, McLean, Daviess, Hopkins and other counties in the hopes of discovering the location of a new pool supposed to be somewhere near to production already found in the Tri-County Field of Ohio, Daviess and Hancock Counties. Strong efforts are being made to extend production in Warren, Barren and Allen Counties and within a short time, it is announced, active work will start in parts of Simpson, Butler, Muhlenburg, Edmonson, Webster, Henderson and Union Counties.

A wildcat is now drilling that will be watched with much interest, far removed from production. This test is being made by the Indiana and Illinois Oil Co., on the Charles Hibbs farm, in the Southard section, near Earlington, south and a little to the west of Madisonville, the county seat of Hopkins County. Drilling operations are under the supervision of Jesse Huggins and on a block of approximately 1,200 acres of leases. The company expects to drill a number of tests to determine if there is oil of marketable volume and quality in that part of Hopkins County.

Tri-County Field

The Tri-County Field, comprising Ohio, Daviess and Hancock Counties, is the area from whence the present large production comes from the western division, with Ohio County away above the other two in development work and production, but Daviess County is showing much better than it has for a long time and is bound to come soon into its own. The supposition is that the producing area runs westward from the rich pools in Ohio County and if such proves true, then Daviess County is in line for an active drilling campaign, being to the west of Ohio County. McLean County is also looked upon as in line for a heavy wildcatting campaign, as much leasing is being done in that county and wells already under way.

Ohio County

The Ambrose Pool, among the newest and most productive pools opened in Ohio County, now leads the State in the number of good wells being completed from week to week, and the production has more than doubled during the past nine months, due to the good wells found in this pool and its extensions.

In the Ambrose Pool, the Wood Oil Co.'s No. 15 on the Mary J. Elmore 100-acre farm, in the heart of the pool, set a string of 618 feet of casing, found the sand from 618 to 666 feet and went to a total depth of 676 feet, shooting with 180 quarts, the initial first 24 hours' production being 200 bbls. No. 16 well, same farm, contained 642 feet of casing, got sand from 642 to 692 feet, and drilled to a total depth of 698 feet, shooting with 180 quarts, the initial production being 302 bbls. No. 17, same farm, is nearing the sand.

Daugherty and others' No. 3, on the Cora Wells 130-acre farm, west of the Elmore farm of the Wood Oil Co., cased at 606 feet, found sand from 606 to 656 feet and drilled to a total depth of 665 feet, was shot with 180 quarts, bringing in a 275-bbl. initial producer. Nos. 4 and 5, same farm, are nearing the sand. West of the Cora Wells farm the same company brought in a well on the Hill Rhodes 150 acres, north of Union Grove Church, which for the first 4 hours producer 60 bbls. and is rated as an initial producer of 150 bbls. or better. No. 2 is now under way.

The Ohio Oil Co.'s No. 1 on the Romie Taylor 7 acres, west of the Ambrose Pool, is estimated at around 15 bbls. initial. In the same area, Loman and others are drilling No. 2 on the Hill Rhodes farm. Bolling and others are drilling a second test on the Joe Chapman farm, west of Union Grove Church. No. 1 on this farm is reported a duster at 787 feet and in the southeast corner of the 50-acre farm. Gourney Development Co. is drilling No. 1 on the J. S. Bartlett 10 acres.

South of the Ambrose Pool, James C. Ellis and others' No. 1, on the Mount Moriah Church lot, is reported showing for around 25 bbls. initial, quite a distance south of his big production on the J. R. Weller farm, the heart of the Ambrose Pool.

The Leeper Oil Co.'s test on the Froman farm, a mile north of the big wells on the J. R. Weller, shows the Ambrose Pool does not extend very far in that direction, as the well only has a light showing.

J. C. Ellis is reported to have a fair showing for a producer in a test on the Bartlett farm, a mile south of the Ambrose Pool, near Clear Run and between there and the hamlet of Taffy.

Creek Oil Co.'s No. 9 on the Fannie Lake 100 acres, in the heart of the rich Ambrose Pool, is reported making an excellent showing, equal to any yet drilled in that area.

Southwest of the Ambrose Pool some 4 or more miles, in what is known as the Sunnydale Pool, Miller and Dameron drilled a deep well to the depth of 762 feet on the Ernest Duke farm, and failed to find sufficient oil to warrant shooting. It was dry in the Jett sand as well as the deep Barlow sand, but had a slight showing in the Jackson sand.

In the same pool George Randolph drilled a dry hole on the Joe Madden farm, going to a total depth of 753 feet, testing out the deeper Barlow sand. The Creek Drilling Co. is reported to have drilled in a dry hole at a test on the Feemther farm, in the Sunnydale area.

In the Sunnydale Pool, Earl Patton's No. 4 on the Renfrew farm, in the Rough River area, and has what is reported a showing for 60 bbls. after a 50-quart shot. In this well a string of 372 feet of casing was set, sand found from 392 to 407 feet, the total depth of the hole. The Sunnydale Oil & Gas Co.'s No. 3 Wilson farm is reported showing around 5 bbls.

Stevens and Smith are reported drilling a wildcat on the Margaret Stinnett and another on the W. W. Mosely farm, southwest of the Midkiff Pool, near the Mosely School.

The Leeper Oil Co. is drilling a test on the King farm, north of Bells Run and southwest of the Midkiff Pool. Foster and others are drilling a test on the J. E. Jewell 68-acre farm.

Jerry Braner and others are making a deep test over a half mile south of Hartford, the county seat of Ohio County. The well is in the Rouch Creek faulted section. Should this develop a commercial production it will mean a big extension to the southward. D. L. Johnson is also making a deep test on the Widow Hodges farm, 2 miles south of the hamlet of Buford.

Daviess County

Thompson and Tremor have another good looking producer in their fourth venture 200 feet from the north line and 1,000 feet from the west line of

(Continued on Page 150)

BUT FIVE CENTRAL WEST PRODUCERS; EIGHT COMPLETIONS IN MICHIGAN

By Whit
Staff Correspondent, Central West Fields

FINDLAY, Ohio, Sept. 26.—The Central West Field comprising the Lima Field, Central Ohio, Indiana and Illinois, reported only 11 completions since the last review, of which 3 were dry holes and 3 gas wells, the 5 producing wells having an initial production of 133 bbls. This is unusual for this big area.

Only two wells of note were found the past several days in the entire Central West area. The best producer was C. A. Peavy's No. 4 on the Lenney farm, in Bath Township, Allen County, and in the Lima Field of northwestern Ohio, with an initial production of 50 bbls. The other was a test made by the Ohio Oil Co. on the Rufus Morgan farm, Madison Township, Pike County, in southwestern Indiana, which showed an initial production of 48 bbls. at a comparatively shallow depth of 959 feet.

Lima Field

C. A. Peavy, Lima operator, made a nice strike at his No. 4 well, 250 feet from the north line and 1,350 feet from the east line of the C. M. Lenney farm, in the southwest quarter of Section 1, in the northeast corner of Bath Township, Allen County, between Lima and Findlay, along the Dixie Highway. This well got on top of the Trenton at 1,316 feet and was drilled 42 feet in the sand and put on the beam and had an initial production the first 24 hours of 50 bbls., which is far above the average producers in the field.

B. Porter and others' No. 27 well, 800 feet from the south line and 1,000 feet from the west line of the J. H. Haley farm, on the oil map as the Jacob Powell farm, in the southeast quarter of Section 5, Eagle Township, Hancock County, and southwest of Findlay, topped the sand at 1,313 feet and went 75 feet in the sand, the well having an initial production of 20 bbls. No. 28 same farm, is drilling. In the McComb Field, of Pleasants Township, same county, northwest of Findlay, the Bath Township Oil Co. is drilling No. 7 on the John A. Bryan farm, Section 14. No. 6, completeed recently, showed an initial of 15 bbls. In the same section, McClure & Schrach are drilling No. 5 on the Sarah Rader farm, and a recent well on this farm showed an initial of 45 bbls. In Portage Township, same county, Mathias Brothers are still drilling at No. 13, on the Isaac Hart farm, Section 27. In this same township, the Oko Oil & Gas Co. pulled out and abandoned No. 19 on the S. W. Trout farm, Section 24, while the Ohio Oil Co. abandoned No. 21 on the S. R. Huntington farm, same section, No. 19 on the Ephram Trout heirs, lease "A" in Section 14, and No. 4 on the Jacob D. Schwab farm, Section 9.

In Center Township, Mercer County, the Appleton Oil Co.'s test, 300 feet from the north line and 900 from the west line of the A. Zimmerman farm, in the southwest quarter of Section 26, is a dry hole. Sand was topped at 1.134 feet and total depth of well 1,164 feet. The Coila Oil & Gas Co.'s No. 3 well, 600 feet from the north line and 1,350 feet from the west

(Continued on Page 150)

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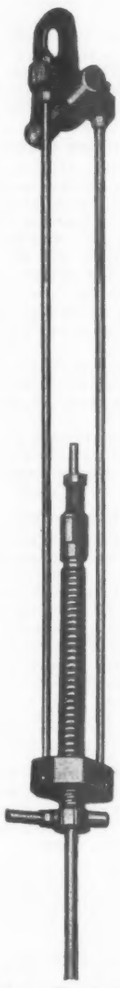

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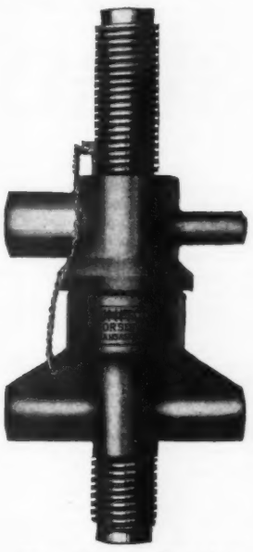

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Fair Producers in Southeastern Ohio

West Virginia and Southwestern Pennsylvania Complete Light Pumpers and Gassers. More Than Usual Dry Holes

By D. S. Wakenight
Staff Correspondent, Eastern Fields

PITTSBURGH, Pa., Sept. 26.—With the exception of a few fair wells, development work in the eastern fields was almost featureless. More than the usual number of dry holes were completed and only a few in the deep sand territory in southeast Ohio escaped the list of dry holes or duster. Fewer wells were completed than the previous week and the greater part located in West Virginia. To make the dullness still greater there was very little new work started and that little in old territory.

At the prevailing price of crude it will require wells of much better size than the present average. Light pumpers do not pay a profit, neither do they meet the decline in the old wells. With only a few months to go, there is not a large or small operating company which will be able to show an increase in production at the close of the year. No new pools have been discovered. At the same time the records will show fewer wells completed in the previous year. The new production brought to the surface will be considerably less.

Best Producers for Week

Just a few fair wells were completed during the week. The deep sand territory in southeast Ohio again claimed all that were worth while. West Virginia and southwest Pennsylvania completed light pumpers and gassers.

In the southeast quarter of Section 20, Harrison Township, Perry County, Ohio, William Cline and others got a fair producer when they completed and shot in the Clinton sand a second test on the Timmons Coal Co.'s property. It produced 80 bbls. the first 24 hours after shot.

In Section 16, Hardy Township, Holmes County, the Pure Oil Co. completed and shot No. 6 on the Warren Close farm. Like the second test on the Timmons Coal Co.'s property, it produced 80 bbls. the first 24 hours after shot in the Clinton sand.

In the northwest quarter of Section 11, Green Township, Hocking County, West, Snyder and other completed a test on the G. H. Guess farm. It produced 50 bbls. the first 24 hours after shot in the Clinton sand.

Late Completions

As the week closed, the southeast Ohio fields completed two fair producers in the deep sand territory. In the southwest quarter of Section 13, Harrison Township, Perry County, Ralph Brothers, Inc., completed in the Clinton sand a test on the J. L. Moore farm. It produced 25 bbls. the first 24 hours after shot. In Fallsbury Township, in the northwest quarter of Section 10, Licking County, W. L. Brown and others completed in the same formation No. 3 on the G. W. Charpin farm. It also produced 25 bbls. the first 24 hours.

In Section 13, Hanover Township, Licking County, the Hope Construction & Refining Co. has a very light pumper in the Clinton sand at a test on the J. W. Shaw farm. In Section 18, Monroe Township, Coshocton County, the Logan Gas Co.'s test on the Oliver Borden farm is a gasser good for 750,000 feet. It is showing a little oil.

In Section 10, Washington Township, Licking County, the Right Oil & Gas Co. is drilling a test on the White & Hoskinson farm. In Section 23, same township, the Twin Hill Oil & Gas Co. is drilling a second test on the S. Walter Lane farm. In the same section and township, the Gordon Oil Co. is due in the Clinton sand at a second test on the T. J. Trowbridge farm. Sweezy and others have drilled a test on the Eliza Woolever farm to a depth of 2,550 feet and shut down.

In Lot 6, Mary Ann Township, Licking County, H. V. Farmer & Rugg have completed in the Berea grit a second test on the Edward Wright farm. The well produced 12 bbls. the first 24 hours after shot.

Hocking County

In the southwest quarter of Section 32, Falls Gore Township, Hocking County, the Griffin Producing Co. has completed in the Clinton sand a test on the I. J. Engle farm. It is through the Clinton sand and at a total depth of 2,950 feet the well is dry.

One mile north of Sharpsburg, Section 24, Berne Township, Athens County, F. M. Selby has completed a test on the Frank Gifford farm. It is a light gasser in the stray sand below the Berea grit. On the same farm and in the same section, F. M. Selby has completed a second test and it is a still lighter gasser in the same formation.

In Section 9, Licking Township, Licking County, Horpell, Patton and others have completed a test on the Clyde Osborn farm. It is dry in the Big Lime formation and is now drilling to the Clinton sand.

Licking County

In Section 14, Hanover Township, Licking County, the Hope Construction & Refining Co. has completed its test on the Sarah E. Smith farm. The first 24 hours after shot in the Clinton sand the hole filled up 200 feet with fluid. It will not make better than a very light pumper.

In Section 53, Salem Township, Washington County, W. C. Patterson & Co. have completed No. 7 on the George Schmidt farm. It was drilled to 965 feet and found nothing but a little oil in the Schramm sand. It will probably be good for 3 bbls. a day. In the southwest quarter of Section 25, Sutton Township, Meigs County, the Ohio Fuel Supply Co. has started a test on the William Rasp farm. In Washington Township, Licking County, Bell, Scholl & Co. have a rig up on the C. W. Riggs farm.

In Section 2, Monroe Township, Coshocton County, the East Ohio Gas Co. has drilled No. 3 on the M. J. Nyhart farm into the Clinton sand and it is a gasser good for 4,000,000 feet. No trace of oil was found at this well.

At Athens, Section 14, Athens Township, Athens County, Cook and others have completed a test on the Charles Pratt farm. It is dry in the Berea grit. In Section 7, Lawrence Township, Washington County, J. O. Herland and others have completed in the Keener sand a test on the Torner-Jett farm. It is a duster in all sands.

Holmes County

In Section 21 and 14, Killbuck Township, Holmes County, the Kemrow Co. is due in the Clinton sand at tests on the Floyd Sondles and Charles Pratt farms. In Section 18, same township, the East Ohio Gas Co. is drilling at 2,150 feet at a test on the D. N. Snow farm. In Section 14, the East Ohio Fuel Gas Co. is drilling on the Malissa Manchester farm. The Empire Gas & Fuel Co. is drilling near the top of the Clinton sand on the William Watt farm.

In Section 22, Washington Township, Hocking County, the Ohio Fuel Supply Co. is drilling a test on the H. H. Reinschild farm. In Section 24 and 32, Falls Gore Township, the Griffin Producing Co. is drilling tests on the I. S. Angle and D. Nutter farms. In Section 11, same township, West, Snyder & Co. are due in the Clinton sand on the G. H. Guess farm. In Section 33, Falls Gore Township, Rice and others are drilling on the S. W. Bowlby farm. In Section 20, Westland Township, Guernsey County, Davis Brothers Co. have the rig completed for a test on the Paul Micha farm. In Sections 13 and 17 Killbuck and Richland Townships, Holmes County, the Kemrow Co. is drilling on the Lloyd Sondles and Charles Shay farms. In Richland Township, the East Ohio Gas Co. is due in the Clinton sand on the J. S. Snyder farm. In Section 17, same township, the Kemrow Co. is due in the Clinton sand on the F. O. Leadbetter farm.

In Richland Township, Section 14, Holmes County, the East Ohio Gas Co.'s test on the J. S. Snyder farm is a gasser in the Clinton sand. In Section 15, Hardy Township, the Pure Oil Co.'s No. 6 on the Warren Close farm is good for 25 or 30 bbls. a day in the Clinton sand. In Section 19, Monroe Township, the Empire Gas & Fuel Co. has a gasser at a test on the F. A. Kinsey farm.

West Virginia

In Jefferson district, Pleasants County, Curtis & Mitchell have drilled their test on the W. E. Brier farm through the Big Injun sand. It found no oil, but is a good gasser in the formation named.

In Mannington district, Marion County, the South Penn Oil Co. has started to drill to the lower sand from the Big Injun its No. 4 on the Catherine Pennant farm. In the same district, Monroe & Laughlin are building the rig for a test on the J. W. Tennant farm.

In Sheridan district, Calhoun County, the Great Elk Oil Co. has completed No. 28 on the Samuel Bachman farm. It is good for 10 bbls. a day. In the same district, the Chemical Oil Co. has a salt sand gasser at a test on the Bennett-Sanders farm. In Sherman district, Godfrey L. Cabot drilled deeper No. 3 on the Jemima Price farm. It is a duster. In Lee district, the Calhoun Oil & Gas Co.'s test on the Edwin Starcher farm is dry in the Big Injun sand.

Marshall County

In Liberty district, Marshall County, the Manufacturers Light & Heat Co. drilled deeper its No. 1 on the W. J. Bocher farm. It is a gasser in the Big Injun sand. In the same district, the Lynn Camp Oil & Gas Co. has drilled in a second test on the Thomas Blake farm and the hole filled up 600 feet with fluid the first 36 hours. It will make a light pumper.

Ira D. Haught & Co.'s test on the W. M. Nutter farm, in Murphy district, Ritchie County, is a gasser in the Big Injun sand. In the same district, T. J. Davis had the same luck when he drilled his test on the Aaron Tingler farm through the same formation.

In Mannington district, Marion County, the Delmar Oil Co. has drilled deeper No. 27 on the John L. Hays farm. It is a duster at a total depth of 3,190 feet. In Coal District, Harrison County, the Clarksburg Light & Heat Co.'s No. 254 on the S. D. Gore heirs' farm is a gasser in the Gantz sand.

Monongalia County

In Mooresville voting precinct, Clay district, Monogalia County, the Dunn Mar Oil & Gas Co. has a light gas pressure in the Bayard sand at a total depth of 3,200 feet, on the James M. Tennant farm. In the same locality, the Carnegie Natural Gas Co. has rebuilt the rig at No. 1 on the S. J. Johnson farm and will drill it from the Big Injun to the lower sands.

Braxton County Tests

In Birch district, Braxton County, the Philadelphia Gas Co. has a rig up on the Charles R. Bourne farm. In the same district, the same company has part of the rig material at a location on the Bennett Oil & Gas Co.'s lease. The same company has the road made to a location on the C. R. Bourne farm. The Philadelphia Gas Co. has also made locations on the S. B. Cork and the Elk Valley Lumber Co.'s tract.

Calhoun County

In Lee district, Calhoun County, the United Carbon Co. has made a location on the D. C. Craddock farm. In the same district, Smith & Starcher are building a rig on the C. W. Starcher farm. In Sheridan district, W. H. Bickel has started to drill a second test on the James S. Wolverton farm. In Grant district, Wetzel County, the Carnegie Natural Gas Co. has a rig completed on the J. H. Ott farm.

In Clay district, Wirt County, Patterson & Dodworth have completed in the Big Injun sand No. 8 on the Duquasie-Bell farm. It is a duster. In Murphy district, Ritchie County, Ira D. Haught and others have completed a test on the W. M. Nutter farm. It is a gasser in the Big Injun sand.

Clay County

In Henry district, Clay County, the United Fuel Gas Co. completed in the Big Injun sand a test on the Amanda Summers farm. It is a gasser good for 250,000 feet. The location is 4,000 feet east of the same company's test on the W. S. and Sarah Pierson farm. In the same district and county, the same company has completed a test on the Nettie J. Graham farm. It is a light gasser in the same formation. The location is 1,000 feet east of No. 4 on the J. M. Green farm.

In Burning Springs district, Wirt County, Roberts Brothers have completed in the second Cow Run sand No. 153 on the Rathbone Oil tract, not good for more than 2 bbls. a day.

On Hollywood Creek, Geary district, Roane County, 3 miles north of the Stump Oil & Gas Co.'s test, drilled by the Stump Oil & Gas Co. on the Elizabeth A. Stump farm. It is a duster.

Lincoln County

In Jefferson district, Lincoln County, G. T. Eay & Son have completed in the Berea grit a test on the James Cooper farm. It is a gasser. In the same district, the David Gas Co. has completed No. 3 on the David Miller farm. It is a gasser in the same formation.

In Grant district, Cabell County, the Two Mile Oil & Gas Co. has a gasser in the Berea grit at a test on the J. H. Harshbarger farm. In Curry district, Putnam County, Wysong & Jaynes have a gasser in the same formation at a test on the Roberts-Vandelind farm.

In McClelland district, Doddridge County, J. R. Trainer's test on the S. F. Flanagan farm is a light gasser in the Gordon sand. In McElroy district, Tyler County, J. D. Foley has a light gasser. In DeKalb district, Gilmer County, McCall & Co. have a gasser in the Big Injun sand at a test on the R. E. Davis farm.

In Central district, Doddridge County, the Manufacturers Light & Heat Co. has completed a test on the Nathaniel Hayden farm. It is a gasser in the Big Injun sand. In the same district, the Parkersburg Oil & Gas Co. has a very light show of oil in the Big Injun sand at a second test on the Leroy Inghram farm.

In south West district, Doddridge County, the Pittsburgh & West Virginia Gas Co. has completed in the Big Injun

(Continued on Page 149)

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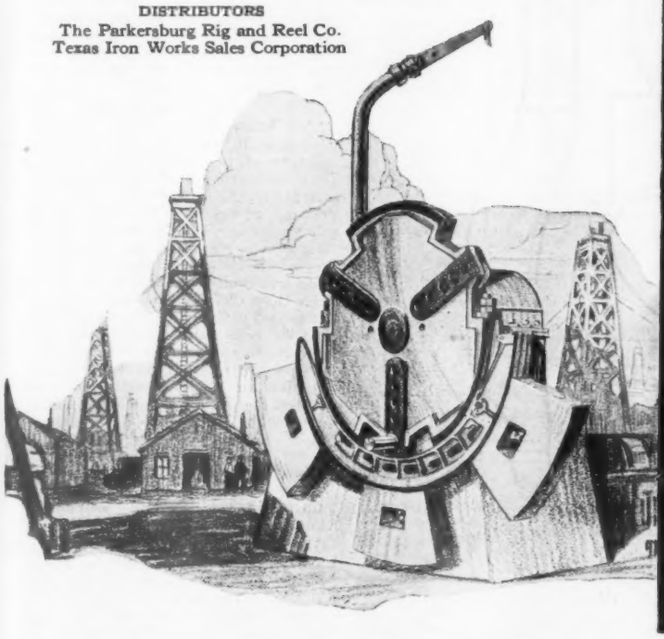
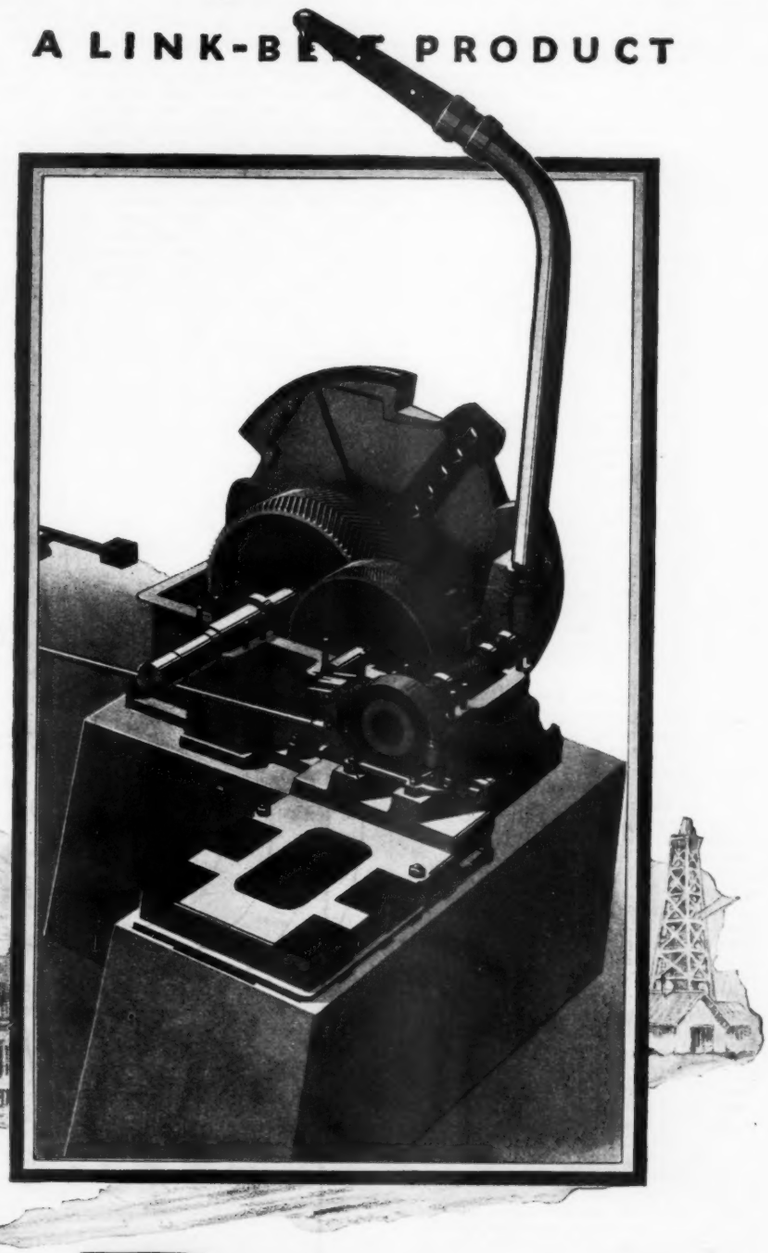




LINK-BELT

Core Drilling Discovers Many Pools

Uncovers Dozens of Structures Thought Favorable to the Accumulation of Petroleum Deposits

By J. L. Dwyer

The diamond core system of drilling has now come into general use by the geological departments of all the major oil companies. Especially in the fields of Oklahoma and Kansas, it has been directly responsible for the discovery of many large pools, while in general exploration work it has uncovered dozens of structures which are thought to be favorable to the accumulation of petroleum deposits, and which in due time will offer locations to be tested by the drill.

As far as preliminary geological exploration work is concerned, the diamond drilling outfit has completely revolutionized the outline, and the working organization of the modern geological department, and its use has to a large extent, eliminated the necessity of the field party which has been common for many years. One Mid-Continent oil company which has been exceptionally successful in operations, and is confining its work to the use of core drill outfits.

This change is naturally based upon specific results of the core drill, and one of the best examples of this is found in the map accompanying this article. The map shows a structure found in Payne County, Oklahoma, by the Pure Oil Co. and the Twin State Oil Co. The original surface structure as revealed by working the surface rocks, showed the position of the structure about one quarter mile to the north of the true "high." Acting upon this information, the companies jointly drilled a well which was a dry hole in the Wilcox sand.

After the test well had been found dry, additional examination led the chief geologists of the two companies to believe that some error had entered the preliminary work, and the territory was reworked. The second surface examination located the position of the structure where the lines upon the map are placed, but the second surface examination did not show a closure, only some east dip, and a nosing.

Core Drill Test

After the second surface exploration, it was decided to use a core drill to test out the possibilities of the block of acreage, and the workings of the core drill resulted in the accompanying map. It plainly showed a closure, and as a result of its revelations, the second well was drilled. This well found the Wilcox horizon productive, and resulted in the activity of a new Wilcox sand pool which is being slowly and carefully drilled.

The experience of the owners of these leases may be true of many other sections of Oklahoma, were the core drill to be used in checking the results of many dry holes drilled upon locations which were made by surface geological data.

The diamond core drilling system is probably familiar to many who have witnessed its extension, but a brief outline of the general principles which govern its work might not be amiss.

Diamond core drilling differs from the ordinary method of drilling wells in that the tools are governed by a hydraulic cylinder which lowers them into the hole at the will of the driller. The larger types of core drilling machines are equipped with boilers and steam engines, but the majority of the outfits now used in the Mid-Continent fields employ the smaller type machines which are driven by gasoline motors. The advantages of the gasoline motors in shallow drilling are chiefly the extreme mobility of equipment which must be a prime consideration in drilling operations of this sort where a move is made on an average of once a week. In drilling to certain geological markers which are usually found at depths ranging from 300 to 600 feet, the gasoline motor driven outfit permits the machine to be torn down, moved and erected upon the new location in two days at the most.

The gasoline motor is placed upon a frame generally consisting of heavy timbers, and in some cases steel framework is used. The frame is mounted upon wheels to facilitate transportation, and the entire assembly is usually hauled by a tractor which is a very essential part of the core drill outfit.

Tractor Essenial

The tractor hauls the machine and all paraphernalia to the drilling location, and then is used to dig a slush pond, and to erect the tripod which is set over the stake. The tripod has a large sheave attached to the top joint, and the wire line used to raise and lower the drilling tools into position before actual drilling motion starts, passes over this sheave to a drum on the drilling machine.

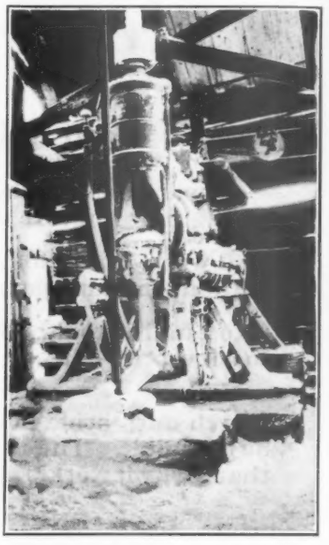
There are three general divisions of the drilling machine, the engine, the hoisting apparatus and the hydraulic feed which handles the tools when drilling is in progress. A pump which supplies a sufficient amount of water for drilling, and which removes the drill cuttings is also mounted on the frame. In early drilling machine construction, this pump had its speed governed by the speed of the motor, but for obvious reasons it is desirable to have a pump speed which is independent of the motor speed, and modern machines are thus equipped.

In ordinary core drill practice, the formations from the top of the hole down are not cored, but a fish tail bit similar to the bit used on rotary tools is connected to the drill string, and until certain definite horizons are reached, the fish tail bit is used. When a marker such as the Winfield lime used in Kansas and northern Oklahoma is approached, the fish tail bit is removed, and the actual core drilling is started.

The core drilling is done by an annular bit in which two, three or four pieces of carbon or black diamonds have been set. These carbons or noncrystalline diamonds are one of the hardest substances known, and have been used to polish white diamonds or brilliants.

The annular bit is attached to the diamond drill string, and lowered into the hole. The diamond drill string consists of a line of hollow drill pipe which is usually made up into 10-foot sections. The 10-foot sections are screwed together, and turned by the engine through the use of a shaft and gearing in a motion similar to the rotary drilling motion. The diamond drilling string differs from the rotary string by being fed down the hole through the workings of the hydraulic cylinder.

The revolutions of the diamond bit cut an annular hole in the rocks and leave a core which is forced up into the hollow drill pipe, and held in place by a core-lifter. When a section of hole has thus been drilled, the string is withdrawn, and the core removed to be placed in the core-box and preserved for the inspection of the subsurface geologist.



A diamond drilling outfit in the Alberta fields.

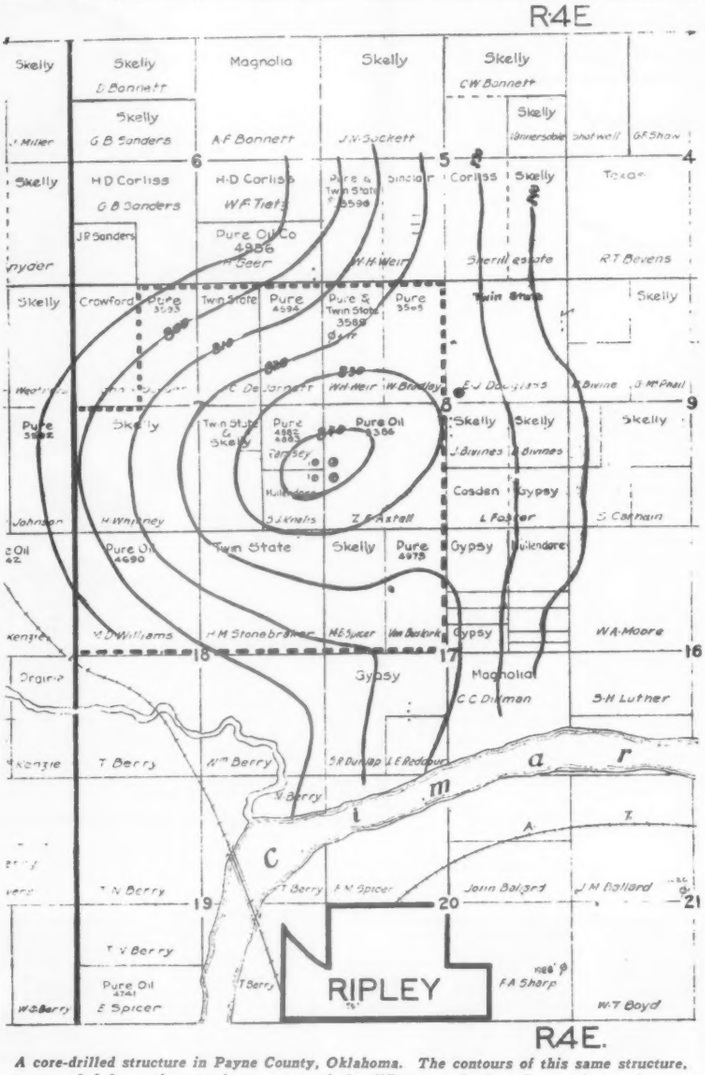
Story of the Carbons

The story of the carbons or black diamonds is in itself an interesting piece of history. While definite ideas of the origin of the carbon have been advanced, comparatively little is known about its formation processes. The only thought is that somewhere in the cooling and shrinking process to which our planet is subjected, certain conditions of heat and pressure tended to form these stones and give them their exceptional hardness. The principal field for mining these black diamonds is in the southeastern part of Brazil, South America. The general geology of the region is said to be made up of pink sandstones, granite and conglomerates, sometimes exposed and sometimes covered by the soil. The diamonds are mostly found in the river beds, and in the beds of former rivers which have gone dry. The largest black diamond ever found was mined in the State of Bahia, Brazil, in 1895, and weighed 3,078 karats.

It is estimated that some 5,000 people are actively engaged in the black diamond mining industry in the State of Bahia. The work is mostly done by placer mining which the natives pursue with crude implements. Modern mining machinery has not yet found its way into the industry in Bahia. The nature of the country, which offers much resistance to transporting heavy machinery, and the cheapness of manual labor are mostly responsible for this. The fact that an area plays out in a limited time, and that there is no regular territory in which the diamonds are found, is also responsible for the elimination of heavy and expensive equipment.

The black diamonds have a tendency to sink to the bottoms of the streams and also to lodge behind cracks and ridges

(Continued on Page 149)



A core-drilled structure in Payne County, Oklahoma. The contours of this same structure, as revealed by surface geology, was entirely different and showed a nosing and some east dip instead of the closure shown on this map

700 Wells Completed In Seminole—with K-P

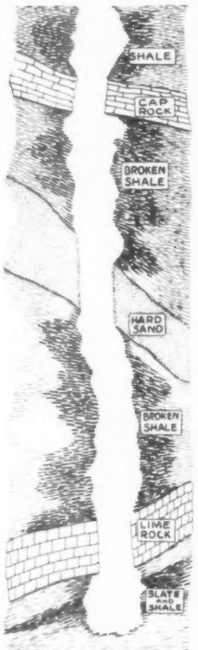
Makes More Hole-Straight-True to Gage - Safer-Faster-Cheaper

K-P Straight Hole Bits with Self-sharpening Cutters have been compared with every known bit now marketed. Nearly four hundred now in use. Any bit that has drilled over 700 wells with No Breakage, No Twist-offs or any other trouble is SOME BIT, and it didn't just happen, for K-P has 70 years of tool making and heat treating experience behind it.

"THEY PUMP MUCH LONGER THAN THEY FLOW"
DRILL STRAIGHT HOLES

Showing the hazard to Contractor and Producer in attempting to drill wells through all formations with any bit that washes away side walls or is not supported sufficiently by side reamers to hold it straight when faults, anticlines or sinclines are encountered.

K-P STRAIGHT HOLE BIT has 57 inches of side cutting surface and at average speed of rotary contacts 240 times per minute. Because of this **CONSTANT CONTACT, K-P STRAIGHT HOLE BITS** in action are like a tube. (Note Drawing.) It won't slide regardless of the fault.



If you don't believe this picture, examine your drill pipe and think of the many times your hole caved. K-P never causes caving.

Showing constant contact of reamers.

View showing position of cutters and reamers on the bottom of the hole and how water is directed.

Note how Well the water works.

Shale is hard in its natural state. K-P cuts the side walls and leaves it in the natural hard state.

Future drillers will be guaged and paid in proportion to their alert, flexible adaptation of the proper bit to meet changing formations. **K-P STRAIGHT HOLE BITS** with self-sharpening cutters will make **90 percent of known formations SAFER, FASTER** and **CHEAPER.**

Kennedye-Plumb Corporation

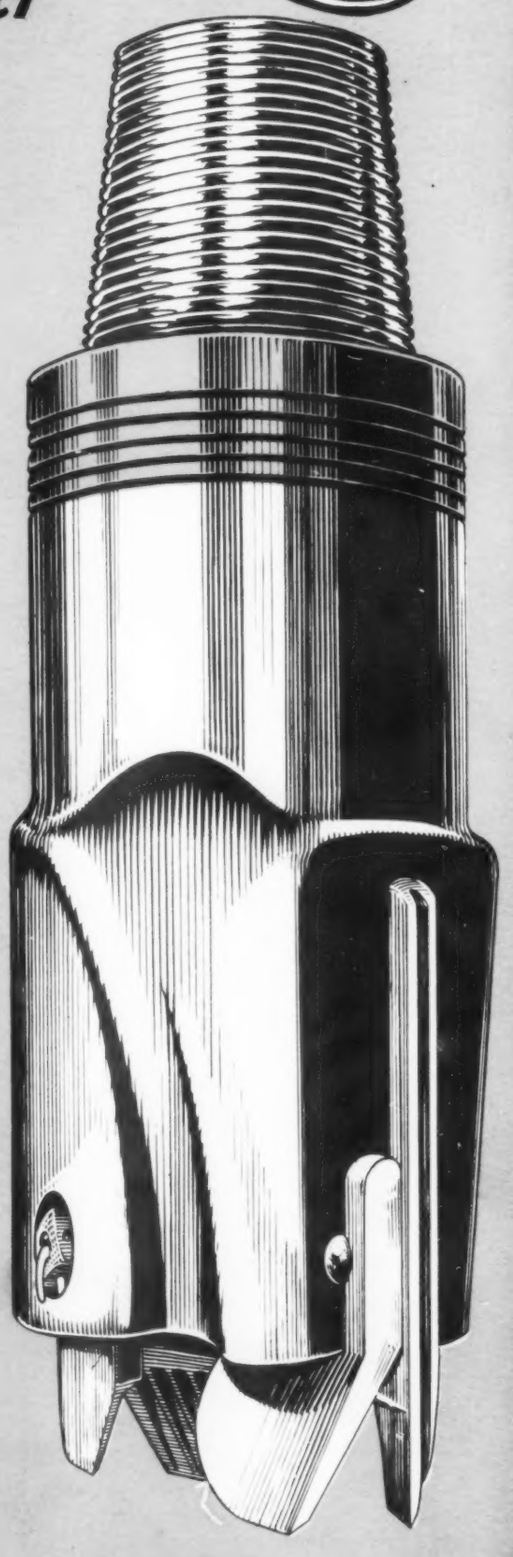
General Offices

Railway Exchange Bldg., St. Louis, Mo., U. S. A.

For Sale Everywhere by

"Continental"-"National"-"Oil Well" Supply Companies

WRITE FOR EIGHT-PAGE BULLETIN



K-P Straight Hole Drilling Bit

This view shows the K-P fitted with its two cutter blades and two reamers ready for drilling.

Make-up or Break-out with Standard Tongs

A Straight Hole—True to Gauge—No After Reaming

The K-P **Straight Hole** Bit Head in its manufacture is machined to a very close tolerance and is dead straight from pin end to bottom of cutters.

The cutters meet at the center of the bit within a few thousandths tolerance. In drilling, the cone that is left in the hole is in dead center. It will be noted that the cutter and reamer blades are so staggered that the bit cannot drop into a fault. Reamers support the bit with 22 inches of bearing surface on each side, **therefore, because of this bearing against wall of the hole, when a fault is encountered the bit must drill straight through or not drill at all.**

SELF-SHARPENING CUTTERS AND HOW!

Because K-P cutter blades are so designed and heat-treated as to make them CONSTANTLY SELF-SHARPENING, always presenting a wire edge to the bottom of the hole. Until entirely worn out, you are assured of steady footage. You can speed up your rig and let 'er ride—for when K-P bits have reached a point where the cutting edge is entirely worn off, the K-P water course touches the bottom of the hole, thus SHUTTING OFF THE PUMP.

SPEED RECORDS TO SHOOT AT

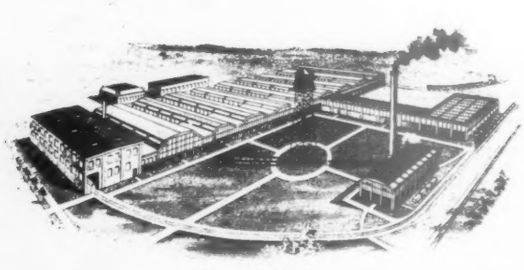
682 feet, 10 hours, 1 set of 11-inch K-P Cutters, cost 1c per foot, made by Magnolia in Texas. Klingensmith Drilling Company made 1000 feet, 11-inch hole, 40 hours, past an offset well that started five days previous in the Seminole Area, bit cost 2c per foot.

Gulf production in Texas made 900 feet, 11-inch hole, in thirty hours, K-P Self-Sharpening Cutters only half worn out, reamers still full to gauge. Magnolia in Oklahoma passed an offset well that had 18 forbles ahead of them in five days and set 4000 feet of 8-inch, 15 days ahead of the Contractor, who used Fish Tails and Discs. This same Contractor is now using K-P Bits and tells us that they are the fastest, toughest and cheapest bits he ever used.

SUCCESSFUL CONTRACTORS USE K-P BITS—ASK THEM WHY!

Hugh Fitzsimmons, P. C. Perry, John Mabee, Jack Schaffer, Cannon & Lyons, Reese Drilling Co., O'Mara & Dial, Carter Oil Co., Ivy Cuniff, "Huskey" Reynolds, Orval Lee, Verne Brown, Humphrey Hudson, Murphy & Lamb, Lane & Wasson, Crosbie & Robinson, Harry Blackstock, H. H. Reardon, Campbell & Southern, Daly, Crawford & Peveto, Tippett & Bond, Summit Drilling Co., Meade Brothers, Noble Drilling Co., McCune & Morrison, Wirt Franklin Cromwell O. & G. Co., Edmundson Drilling Co., Harry Bass, and many more Contractors and Producing Companies will tell you that K-P Straight Hole Bits are Safer, Faster, and Cheaper and will drill 90% OF KNOWN FORMATIONS.

The Plants Back of K-P Straight Hole Bits



St. Louis Plant

Philadelphia Plant

Production

Average output of these two plants approximately five million pieces per year. **THAT'S MASS PRODUCTION!**

Only **MASS PRODUCTION** scientifically conceived and executed could make possible the K-P **Straight Hole** Bit with its exclusive features at such phenomenally low prices.

Nothing except the **HARDEST, TOUGHEST** Double Alloy Tool Steel **DROPPED FORGED, GROUND TO FIT** combined with skillful **HEAT TREATMENT** by "Masters of the Art for over seventy years" could stand the gaff and produce such high performance records in the field.

Use this outstanding bit—see it at your supply store.

Kennedye-Plumb Corporation

General Offices

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For Sale Everywhere by

"Continental"-"National"-"Oil Well" Supply Companies

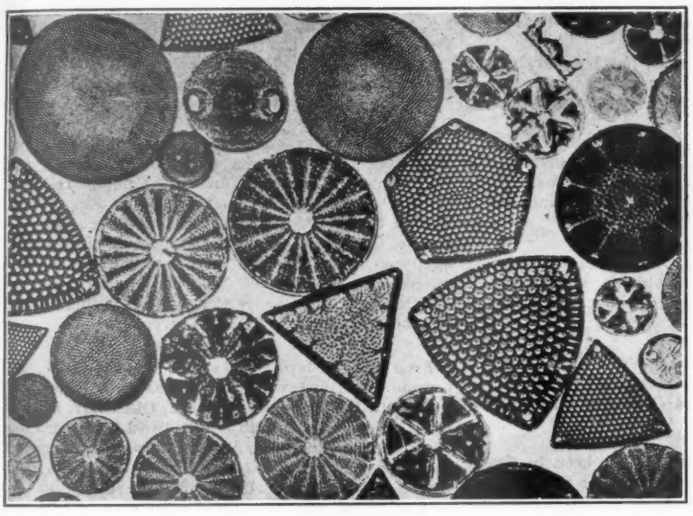
Recent Research in Making of Oil

Science Learning From Marine Life New Things About the Origin of Petroleum in Nature's Laboratory

By Wallace E. Pratt*
Geologist and Director, Humble Oil & Refining Co.

No thoughtful observer with any conception of the all-important position which oil occupies in our modern social and industrial order can fail to pause occasionally and ask himself just how Nature went about it to provide humanity so munificently with this now indispensable resource. Even before man learned to appropriate oil to his own uses, he manifested considerable curiosity about it, and as far back as historic records go he has puzzled over the true nature of this remarkable liquid.

With the exploitation of petroleum, which began in America in 1859, and the subsequent development which made oil fundamental to industry, intelligent inquiry took form and became widespread, until within the past two generations students of geology, chemistry, and physics have all concerned themselves with petroleum, its constitution and its origin, as well as its uses. But our knowledge of petroleum is still only fragmentary. Just as we learned to harness electricity and bind it to our service before we acquired more than the rudiments of the theory of electricity, so with oil, we have learned how to detect its most remote hiding places and we have discovered hundreds of its properties which make it useful to society, without having been able to do more than guess as to how oil originally came to be.



A group of diatoms, possible sources of petroleum. The forms are magnified about 300 times.

It is appropriate, therefore, that one of the first results of the recent studies made possible through the bequests of John D. Rockefeller and the Universal Oil Products Co. to the American Petroleum Institute for pure research on the problems of the petroleum industry should throw important new light on the obscure problem of the origin of oil.

Two Elements

We have long known that oil is at once most simple and yet most complex in constitution. It is simple in that it consists essentially of only two elements, namely, hydrogen and carbon; but it is complex in that hydrogen and carbon by uniting with each other in different proportions, form a veritable multitude of compounds—solid, liquid, and gaseous—each with totally distinctive properties. A bewildering number of these hydrogen-carbon compounds, or hydrocarbons as they are commonly designated, are present in ordinary petroleum and are, in fact, the essential constituents of petroleum.

The problem of the origin or genesis of oil is not so much to determine the ultimate source of the elements, hydrogen and carbon, of which it is composed. These are found combined with other elements in the earth itself in literally inexhaustible quantities, and they are known to be present in corresponding abundance throughout the universe. Our real concern is how Nature has proceeded to secure the combination of these two elements with each other in the series of compounds which, together, form oil. To know the elements which go to make up a substance is not enough of itself to explain the origin or even the properties of the substance. We know, for instance, that living cells are composed in large part of carbon, hydrogen, oxygen, and nitrogen, but this knowledge is totally inadequate to explain the origin or the phenomena of life.

Making Oil

We are learning now how to combine hydrogen and carbon ourselves so as to form oil. Our laboratories have become fairly proficient in taking carbon from coal and hydrogen from water or some other source and forcing them to combine as oil. Ultimately, no doubt, we shall perform this operation commercially and so manufacture our own oil, independently of nature's process. In the meantime, however, we are still curious to know just how nature has done the thing so well and so extravagantly. Possibly she used a method very much like our own, but of this we are by no means certain.

For years there have been two schools of thought as to the origin of oil. The so-called inorganic theory, which formerly had a rather wide vogue, particularly with chemical investigators, argues that hydrogen and carbon, as elements in the rocks of the original lifeless earth, have been brought together in the earth's deep interior, under conditions of great heat and pressure, and so forced into combination as hydrocarbons. From these deep sources oil has later been brought into porous rocks closer to the earth's surface where man occasionally drills into it.

Of Living Origin

The organic theory of the origin of oil, which gained prestige later than the inorganic theory, but which latterly has been far more widely accepted, was born of geological observation. It holds that the source material of oil has always previously been living substance, that is, organic substance; that our large deposits of petroleum are derived from pre-existing life, or organism. It denies that much petroleum has resulted from the combination of hydrogen and carbon in primitive, igneous or inorganic rocks, without the intervention of living processes.

The inorganic theory is sound in principle and is supported by the facts that oil and allied gaseous hydrocarbons do occur, even though rarely, in or associated with igneous rocks, that hydrogen and carbon-bearing gases commonly escape from volcanic vents which are directly connected with the earth's heated interior; that certain metals, such as nickel, which presumably come from igneous-rock sources, are found in the ash of petroleum; and that helium, an inert gas that must come from igneous or inorganic rocks, is a fairly common constituent of the natural gases that are associated with petroleum. If igneous or inorganic rocks were not all but devoid of pore space in which petroleum could abide, it is argued, we would find oil more frequently in these rocks, and if oil is usually found in organic or sedimentary rocks (as is, of course, true) that, it is argued, is because only in this class of rocks is the requisite pore space present to afford reservoirs for petroleum, whatever its source.

Marine Basis

The organic theory, on the other hand, holds that the hydrogen and carbon that make up petroleum both come from the remains of pre-existing plant and animal life. This organic material represents, in the main, former marine life and swamp life rather than true land life; similarly it represents microscopic life, principally, rather than larger forms of life.

The argument for the organic theory is written in the records of the ancient seas which ebbed and flowed across the margins of the continents. These seas periodically advanced and retreated across the land, so that, in their greatest expanse, they mingled the waters of the oceans on the opposite sides of the continents. The present Gulf of Mexico is the modern remnant of one of these continental seas.

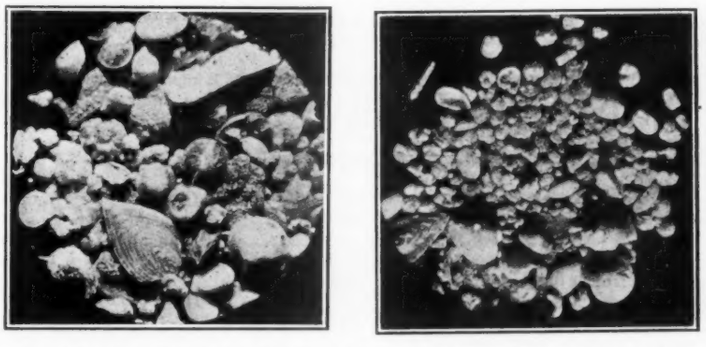
Throughout the ages, rivers flowed down to these seas and then as now carried with them great volumes of mud and sand to be spread out by currents and tides over the sea bottom. Each day and each year through millenium after millenium new deposits were distributed, layer upon layer, over the sea floor. With the increasing load due to the weight of these new beds the earth's crust sank so that the depth of water remained about constant. Thus were built up the thick series of compacted muds and sands which characterize the formations penetrated in our oil wells. These sea bottom muds and sands of a geological yesterday, squeezed by the weight of thousands of feet of overlying muds and sands, crumpled and broken and finally thrust up above sea level by the movements of the earth's crust around and beneath them, finally became the shales and limestones and sandstones of today.

It is this organic mud, the mass of microscopic plant and animal life which comes into the sea with the river silts, together with the much greater volume of similar tiny marine plants and animals, that the organic theory maintains is the principal source material of petroleum. These minute organisms, dying and settling to bottom, buried by subsequently deposited muds, sealed from the air, and further protected from ordinary decay by the brine of the ocean itself, were subjected to a slow decomposition which finally yielded, among other products, the petroleum of commerce.

Petroleum so formed, and disseminated uniformly through great bodies of organic mud, is not yet available to man. It has still to be concentrated, to accumulate in a definite limited reservoir such as the pore spaces between the grains of a bed of sand, or, more rarely, the cracks and cavities of a limestone, whence it can issue under pressure into the well which the operator drills into the reservoir.

Process of Accumulation

This concentration of disseminated petroleum, again, is accomplished in part by pressure which transforms the mud into a dense shale, at the same time driving the oil into the more open, noncompressible sands, and in part by water moving down through the bed from its outcrop on the earth's surface, or rising upward along the bed under pressure from greater depths, but in either case flushing the oil ahead of it until the latter finally accumulates in the top of a fold or against the broken edge of a sand bed whence the water cannot dislodge it.



Foraminifera from drill cuttings from Texas oil wells, highly magnified. The size of these little animals may be judged by the fact that their photograph as shown is enlarged 25 times.

These are the conditions, according to the organic theory, which make oil. Certainly these are the types of rocks in which we search for and in which we find and produce our oil. The great volcanic regions of the earth, where inorganic processes are most in evidence, yield us no oil, whereas our former marine

(Continued on Page 70)

*In The Lamp.

MEN KNOWN IN OILDOM

Charles G. Black

Charles G. Black, president of the Standard Oil Company of New Jersey incorporated in Delaware, which was recently organized to take over the operating end of the New Jersey company in the United States, first became permanently identified with the company in 1883. Mr. Black was born in Cleveland, Ohio, in 1868. During the summer of 1882, as a 14-year-old boy, he obtained his first job cutting and bending wire to make handles for oil cans for the Standard Oil Company. He returned to school in the fall and secured a permanent position the following August with the company. Six years later he came to New York as secretary to the superintendent of the Bayonne refinery. In the fall of 1899 he was made assistant superintendent of the refinery.

In 1907, Mr. Black was selected to be superintendent of the Camden works. He remained there a few months before being called to New York to assume the duties of general superintendent of the Bayway refinery. Mr. Black remained general superintendent until April, 1913, when he was appointed a member of the manufacturing committee and general manager of the Bayway refinery.

In March, 1917, he was made chairman of the manufacturing committee, in which capacity he served continuously until December 31, 1920. On that date he gave up his duties as chairman of the manufacturing committee to become a director of the Standard Oil Company of New Jersey. His new duties become effective October 1.

PERSONAL PARAGRAPHS

E. B. Hopkins, well-known petroleum engineer, has just arrived in New York from Venezuela.

* * *

William F. Morgan, of San Antonio, Tex., has returned from a business trip to New York City.

* * *

J. E. Walsh, of San Antonio, Tex., has recently returned from a three months' stay in New York City.

* * *

E. R. Kaufman, prominent in oil circles on the Louisiana Gulf Coast, was a recent Beaumont, Tex., visitor.

* * *

Dr. G. Sheppard, F.G.S., of the Anglo-Eucadorian Oilfields, Ltd., has left England for Santa Elena, Eucador.

* * *

W. H. Gaither, Houston, Tex., representative of the National Transit Pump & Machine Company, made a recent business trip to Dallas and Fort Worth, Tex.

W. B. Flynn, Beaumont, Tex., oil operator, is in Chicago, on a pleasure and business trip.

* * *

Stephen Cullinan, oil producer of Tulsa, Okla., is in Rochester, Minn., for a minor operation.

* * *

R. M. Young, president of the Carter Oil Company, has returned to Tulsa after a visit to New York.

* * *

H. C. Hines, of Hines Brothers, operators in West Texas and on the Gulf Coast, was a recent visitor in Houston, Tex.

* * *

John M. Lovejoy, president of the Amerada Petroleum Corporation, is back in Tulsa after a tour of the Texas fields.

* * *

Cyclone Smith, sales representative of the Borden Company is in Tulsa after a trip through the Rocky Mountain oil fields.

* * *

G. M. Vandaveer, pipe line superintendent for the Midwest Refining Company, is spending a few weeks visiting the Saginaw, Mich., Field.

* * *

Graham Reid, assistant treasurer of the American Republics Corporation, New York, has returned to New York following a brief trip to Houston, Tex.

* * *

C. O. Maddox, of Laredo, Tex., has left for New York where he will finance a new company. He has recently severed his relations with the Simms Oil Company.

* * *

F. Julius Fohs, chief geologist and vice president of the Humphreys Corporation, Houston, Tex., has returned to New York City following a trip into the Gulf Coast region.

* * *

Robert B. Violet, attorney; H. D. Collins, purchasing agent, and G. Frank Aldrick, chief scout, in the Texas office of the Independent Oil & Gas Company, have resigned.

* * *

Elmer Dyer, J. A. Patton and Willet Groover, of the Big Sinking Field in Lee County, Kentucky, are looking over the Ohio-Daviess County fields of the western Kentucky division.

* * *

G. W. Bates, of Parsons, Kans., has been in San Antonio, Tex., to arrange for a location for a test he is to drill in Blanco County, Texas, about 8 miles east of Blanco City.

* * *

Mike Glasscock has just returned to San Antonio, Tex., from a trip to Big Springs and to look over the field in southern Howard County where the Glasscock Brothers have considerable acreage.

* * *

W. R. Thomas, head of the leasing and scouting department for The Texas Company, in the South Texas division, Houston, Tex., has returned to his duties following a vacation spent in California.

* * *

Charles G. Laskey, president of the Northwest Louisiana Gas Company, Peoples Gas & Fuel Company, and Belchic & Laskey, Inc., of Shreveport, La., has been in New York on a two weeks' business trip.

* * *

R. L. Dunkle, of Tulsa, Okla., has returned from a trip to Pennsylvania. Mrs. Dunkle accompanied him on the trip. Mrs. Mark Dunlop of Callensburg, Pa., an aunt of Mr. Dunkle, returned with them to Tulsa to spend a month.

* * *

H. P. Parrigin, superintendent of The Texas Company, refining department, Dallas, Tex., accompanied by Mrs. Parrigin, is spending a month in Kentucky visiting relatives and friends. Mr. and Mrs. Parrigin are traveling by automobile.

* * *

Judge J. S. Wheless, after residing a number of years in San Antonio, Tex., where he has been active in the oil business, has returned to his old home in Kerrville, and will return to the practice of law.

* * *

E. S. Rochester, secretary of the Federal Oil Conservation Board, has tendered his resignation to take effect in December, it was stated by the Secretary of the Department of the Interior, Dr. Hubert Work, who is also chairman of the board.

H. F. Miller of the Carter Oil Company forces is making a three weeks' trip to the California fields reviewing the gasoline situation.

* * *

John H. McClurkin, well-known operator and contractor of Winchester, Ky., and who opened up the Mill Creek Field in Clay County, Tennessee, has been looking over the rich field in Ohio County, Kentucky, making his headquarters at Owensboro.

* * *

W. A. Miller and Mrs. Miller and their son, W. A. Miller, Jr., are making a combined business and pleasure trip through the Rocky Mountain region. Mr. Miller is president of the Illinois Pipe Line Company and lives in Lima, Ohio. His son is superintendent of the Rocky Mountain division.

* * *

C. C. Hamilton, president of the Sunray Oil Corporation, and a party of officials from New York, have been visiting the company's properties in the Mid-Continent. C. H. Wright, of Tulsa, Okla., has been elected president of the Sunray Oil Company, an Oklahoma corporation, the operating end of the Sunray Oil Corporation, the holding company.

* * *

Headquarters of Harold Fry, a director of the Standard Oil Company of Venezuela, have recently been moved from Maturin to Maracaibo. Mr. Fry is now in charge of all the operations in all of Venezuela. He formerly directed the work in eastern Venezuela. Mr. Fry started work for the Standard Oil interests following his graduation from Colgate University in 1919.

* * *

Keith Clevenger, chairman of the Public Relations section of the Oklahoma Utilities Association and for the past four years director of public relations for the natural gas companies of the Empire Gas & Fuel Company, will head the public relations activities of the Empire Companies, according to announcement by H. R. Straight, vice president and general manager. O. W. Weaver, who has been associated with the Empire Companies for three years, will be associated with Mr. Clevenger.

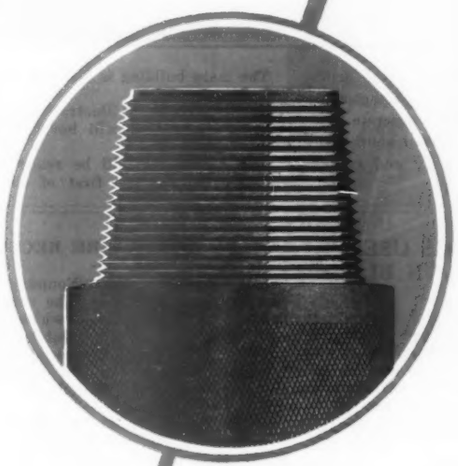
* * *

Fred W. Shelton, formerly of Casper, Wyo., has become identified with Reiter-Foster Oil Corporation, with headquarters at Tulsa, Okla. Mr. Shelton for eight years was with the Midwest Refining Company as assistant to A. W. Peake, vice president of the Midwest, in charge of production. After his graduation from Cornell University, he began at the bottom of the Midwest organization as a tool dresser and later a driller and until recently was in charge of production for the Midwest Exploration Company at Amarillo, Tex. Mr. Shelton is an authority on the air and gas lift as used for increasing oil production.

* * *

The offer by John D. Rockefeller, through the International Petroleum Exposition, of a gold medal to the oldest living oil man and a silver medal to the oldest still in active service, has brought out the names of a host of veterans in the industry, whose names follow: F. M. and Philip Kleckner, Skiatook, Okla.; Leonard L. Beatty, Turley, Okla.; J. Alex Stephenson, Tulsa, Okla.; John C. Blood, Conneaut, Ohio; R. M. Dunn, Ventura, Calif.; C. B. McKenzie, Yale, Okla.; W. A. Hughes, Oil City, Pa.; Henry Aggers, Ranger, Tex.; C. S. Richardson, Garber, Okla.; J. H. Waggoner, Tulsa, Okla.; A. W. Gordon, Bella Vista, Okla.; Martin C. O'Brien, Ramona, Okla.; J. E. Long, Long Beach, Calif.; Lyman D. Rhoades, Oil City, Pa.; Samuel Fertig, Titusville, Pa.; John C. Looker, Bradford, Pa.; Fred A. Aggers, Kane, Pa.; J. M. Wilson, Bradford, Pa.; John L. Wilson, Titusville, Pa.; Robert C. Wilson, Newark, Ohio; Mark M. Wilson, Titusville, Pa.; John W. Dwigans, Tulsa, Okla.; Charles T. Benner, Tidioute, Pa.; A. C. Wiley, Burbank, Okla.; Herbert T. Morian, Enterprise, Pa.; Samuel Smith, Titusville, Pa., who worked on the first well ever drilled in America; John H. Markham, Peabody, Kans.; George E. McGill, Karns City, Pa.; Peter Fertig, Monrovia, Calif.; Tom C. Clements, Tulsa, Okla.; Curt Rankin, Texon, Tex.; Jacob Sheasley, Franklin, Pa.; C. McArthur, Kinzua, Pa.; Samuel C. Farmer, Clarendon, Pa.; D. W. Church, Tionesta, Pa.; Charles H. Nason, Tidioute, Pa.; William Merkle, Tidioute, Pa.; Alex Wilson, Brownwood, Tex.; James McBride, Amarillo, Tex.; J. L. Campbell, Cleveland, Okla.; Thomas Collins, Big Bend, W. Va.; A. J. Echanbaugh, Seminole, Okla., and Thomas D. Farrell, Tulsa, Okla.

for Greater Economy



Use a HUGHES TOOL JOINT on every Joint of Pipe

Many operators and contractors throughout the rotary fields of the country are now using a Hughes Tool Joint on every joint of pipe. By so doing they are assured of

Greater speed in going into the hole.

A saving of time in moving from a completed well to a new location.

A maximum degree of safety.

Hughes Tool Joints cost no more but do last longer.

HUGHES TOOL COMPANY

Service Plants
Los Angeles, Calif.
Oklahoma City, Okla.

Main Office and Plant
HOUSTON, TEXAS

Export Office
Woolworth Bldg.
New York City

EQUIPMENT AND SUPPLIES

INSTALL SYNCHRONOUS MOTOR DRIVEN PUMPS

The first synchronous motor-driven centrifugal pumps for the transfer of oil over a considerable distance were put into operation in April, 1927, at the Coulter Station of the Illinois Pipe Line Co. This installation was more or less of an experiment to determine whether oil could be successfully handled at high pressure by centrifugal pumps, and whether the churning motion of the centrifugal pump blades would emulsify the oil. The first installation used two Westinghouse 150 horsepower, 1,800 revolutions per minute synchronous motors driving two Cameron centrifugal pumps in series. After making tests it was decided to use pumps requiring 400 horsepower, 1,800 revolutions per minute synchronous motors.

The normal pressures carried at the pumps is 500 pounds per square inch. After completing a series of tests no trouble developed and the Illinois Pipe Line Co. decided to electrify all of its lines from St. Louis to the Pennsylvania border, using 400 horsepower Cameron pumping units. The pumps on this line are now driven by 4,300 horsepower of Westinghouse high efficiency synchronous motors.

PATENT ISSUED FOR WELDED STEEL FRAMES

Recent patents issued from the United States Patent Office include welded steel motor frames in which welded steel construction has replaced castings. Patents 1,629,877 and 1,629,876 were issued to James F. Lincoln and assigned to The Lincoln Electric Co. of Cleveland, Ohio.

The construction is an assembly of hot rolled steel parts welded into the equivalent of a casting. The claims allowed for the method of construction cover its use only to dynamo electric machines. According to Lincoln Electric Co. engineers, it is claimed the welded steel method of construction gives a practically unbreakable frame, lighter weight and better ventilation. Steel is six times as strong and two and one-half times as stiff, therefore, less weight is obtained. Steel also costs only about one-third as much per pound so that materially less production cost is assured.

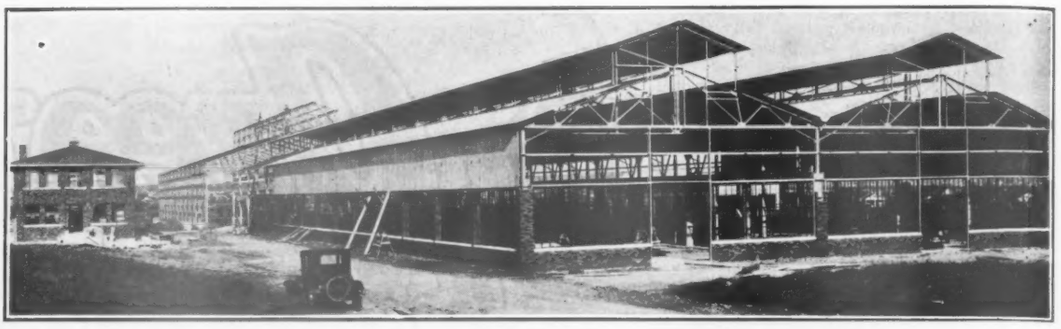
NEW SERVICE STATION

The Climax Engineering Co., Clinton, Iowa, announces the appointment of John Reiner & Co., Inc., 309 Church Street, New York City, N. Y., as Climax service representatives for the states of Connecticut, New York and New Jersey. John Reiner & Co., Inc., maintain a complete assortment of repair parts for all models of Climax engines and have available a corps of service engineers. In addition, a selection of Climax engines and industrial power units are in stock.

PERSONNEL CHANGES

Harry T. Strout has been transferred to the Torrance, Cal., plant of the International Derrick & Equipment Co., where he will act as chief engineer of the standard building department. Wayland Nelson has been transferred to the Columbus office from Tulsa and placed in charge of the standard steel building engineering in Columbus. A. G. Bradbury has been transferred from Dallas to Tulsa, where he will manage the standard steel building department for Oklahoma and Kansas.

NEW PLANT OF THE HINDERLITER TOOL CO.



The illustration shows the new manufacturing plant of the Hinderliter Tool Co., now in course of construction at Tulsa. This structure, according to Mr. Frank J. Hinderliter, president, is to be the largest plant in the world devoted exclusively to the manufacture of drilling and fishing tools. It is being constructed of steel, reinforced concrete and brick and will be fitted throughout with the most modern machinery and equipment.

The main building is 630 feet long and 100 feet in width.

On the left of the illustration is shown the building which will house the shop offices.

The new plant will be ready for occupation around the first of the year.

WORTHINGTON COMPANY EXPANSION PROGRAM

According to President Belnap of the Worthington Pump & Machinery Corp., the transfer of certain types of Diesel engine construction from the recently closed Blake and Knowles plant at Cambridge to the newly enlarged Snow works in Buffalo is the latest step in his policy of concentrating facilities for increased efficiency in economical operation.

For the past two years the Snow plant has been expanding and modernizing to prepare for this transfer. The Snow plant is now completely renovated. The best of the Cambridge plant equipment has been moved in. To meet the demand for additional power, a large new power plant has been built. Extra tracks in the yard serve enlarged storage and shipping facilities. The foundry has been modernized, the machine shops equipped with many new machines and additional cranes of the latest design. To test the corporation's Diesel and gas engines of the various types and sizes the most modern erection floors and test stands have been constructed. To assure effective supervision and inspection the corporation's Diesel engineering talent has also been concentrated at this point.

The large double-acting U. S. Shipping Board Diesel engines that evoked such widespread comment were built at the Snow works. These engines, the first to be installed in the Government's cargo ship conversion program, are, according to their operators, giving a good account of themselves in the motorships "Tampa" and "Unicoi." Besides the concentration of the complete line of Diesels at this plant there has been added the manufacture of a Diesel designed for fishing boats, small stationary and portable applications such as excavating shovels and hoisting rigs, and for driving small pumps and compressors.

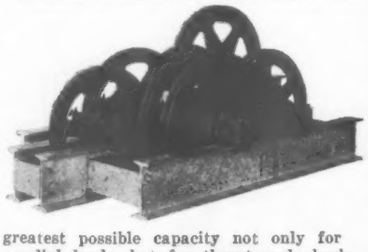
L. H. BOSNIAN SUPERINTENDENT

Luther H. Bosnian has been appointed superintendent of the Park Street plant of the Chain Belt Co., Milwaukee, manufacturers of Rex conveyors, traveling water screens, chain and concrete mixers. Mr. Bosnian is a graduate of the Sheffield Scientific School, Yale University, and has been connected with the Chain Belt Co.'s production department for eight years. Previous to this he was with the Westinghouse Electric & Manufacturing Co. and came to the Chain Belt Co. in 1919 as a time study man.

TIMKEN BEARINGS USED IN NEW CROWN BLOCK

The International Derrick & Equipment Co., Columbus, Ohio, in presenting its new Design "C" roller bearing crown block, has incorporated in its design the use of Timken tapered roller bearings and Idecalloy manganese steel sheaves.

These features are said to enable International to build into these blocks the



greatest possible capacity not only for radial loads, but for thrust and shock. All load from all directions is equally handled by the Timken tapered construction bearings. No auxiliary parts are needed and there is no moving contact outside of the bearing itself.

Sheaves are made of Idecalloy manganese steel, giving them great strength, long life and practically eliminating wear on the groove. Wire line sheaves are standard although combination or manila rope sheaves will be furnished upon specification.

Turned and polished steel shafts fit into special adjustable boxes which permit a very compact grouping of the sheaves on the derrick top. Hot dip galvanized bridge steel I-beans with channel separators, adjustable water table clamps and Alemite pressure lubrication are additional features.

MINE SAFETY APPLIANCES

The Mine Safety Appliances Co., Pittsburgh, Pa., announces the following appointments and changes in sales personnel: The appointment of M. B. Orfald as district representative at Duluth, Minn., with headquarters at 1928 East Superior Street and John B. Jones as district representative at Fairmont, W. Va., with headquarters at 624 Fairmont Avenue. George L. Seth, former district representative at Buffalo, N. Y., has been transferred to Pittsburgh as assistant sales manager. Mr. Seth has been succeeded at Buffalo by C. M. Donahue, 292 West North Street.

TRADE LITERATURE RECEIVED

From Marion Machine, Foundry & Supply Co. of Marion, Ind., the current issue of the Marion Line, which devotes much space to the silver jubilee of that concern which from a modest start has expanded to a widespread organization covering a vast industrial field.

From the Linde Air Products Co., a book entitled "Oxweld Roof Trusses," by H. H. Moss of the company's engineering department.

From Bethlehem Steel Co., Bethlehem, Pa., a new publication on Bethlehem Diesel engines Type S for stationary service.

From Laclede-Christy Co., St. Louis, Mo., the current bulletin which details the uses of this company's products in the petroleum industry.

From Arrowhead Iron Works, Inc., Kansas City, Mo., a handbook of grating and metal treads for engineers, architects and constructors.

A pamphlet has just been issued by Merco Nordstrom Valve Co. featuring the different uses of lubricated valves in the petroleum industry. Two additional pamphlets have been issued showing the uses in the gasoline extraction industry and in the gas industry. These three pamphlets are illustrated with interior views of plants showing different valve hookups and explain the manner in which Merco valves are placed in service.

QUAKES STOP RUSSIAN OIL?

The correspondent of the Moscow Pravda at Baku reports that several oil wells, including one recently opened gusher, stopped flowing suddenly, government geologists believing that the oil fields have been affected by the Crimean earthquakes. Reports from Crimea say that an average of four strong shocks daily are being recorded and the population still is panic-stricken. Most of the inhabitants of Yalla, Simferopol Sebastopol, are living in parks and suburbs.

BUILDING SOUTH BEND PLANT

The M. B. Skinner Co., manufacturers of pipe repair clamps and valve reseating tools, Chicago, is building a new plant at South Bend, Ind., necessitated by expansion. It is retaining the Chicago offices and plant for the present.

Waukesha Driven Gas Lift Plant at Bowlegs, Oklahoma

p-736-M

Turning Waste Into Gain

7,500,000 cubic feet of gas per day is the capacity of this plant—sufficient to lift 5000 or more barrels of oil and serve as many as 17 wells. 125 H. P. Waukesha "Ricardo Head" Engines of the heavy duty Oil Field Type, running on waste gas, furnish the power necessary to operate these Ingersoll-Rand Imperial Type 10 Compressors.

These Waukesha heavy duty four-cylinder engines are built especially for this compressor drive service. 80-100 and 125 H. P. are the sizes available. They have unusually large radiators to provide adequate cooling under Oklahoma, Texas and Venezuela temperatures, even when enclosed in a house as shown above. Portable Oil Field Units are also available for driving oil, water and mud pumps, also rotary or cable drilling rigs. Write for our "Gas Lift" book if you do not have a copy.

P-761-L

OIL INDUSTRY EQUIPMENT DIVISION

WAUKESHA MOTOR COMPANY

Waukesha Wisconsin

New York	Kansas City	Denver	Tulsa	Houston	San Francisco
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Exclusive Builders of Heavy Duty Gasoline Engines for Over Twenty Years

Natural Gas Developments

POSSIBILITIES OF GAS CONSUMPTION GROWTH

Convincing proof that the gas companies of America fear no saturation point in the use of gas for household use, even though 52,000,000 persons use gas service daily, is revealed in figures made public by the General Federation of Women's Clubs as the result of a survey which covered nearly 8,000,000 homes in 2,228 communities, representing 48 states and the District of Columbia.

Although approximately 96 per cent of the communities with populations of from 10,000 to 25,000 have gas plants, the Federal states that only 51 per cent of the homes in such communities are using gas for cooking and only 22 per cent are using gas for water heating.

Of the towns with 25,000 to 50,000 population, 99 per cent of which have gas plants, gas ranges are in but 60 per cent of the homes and water heaters in but 26 per cent.

In towns of 50,000 to 100,000 population, all of which have gas works, 69 per cent of the homes are equipped with gas ranges and only a third have water heaters.

Even in cities of 100,000 and more population, the Federation finds that less that 80 per cent of the homes are using gas ranges and only one-half are using water heaters.

OHIO STANDS EIGHTH IN GAS PRODUCTION

Ohio stands eighth among the states in point of natural gas production and sixth in point of consumption, using annually nearly 70,000,000,000 feet which she is compelled to import, according to a recently issued report of the United States Bureau of Mines.

This report shows that although natural gas is found in 22 states, only four of these produce amounts in excess of their own requirements. West Virginia, from which Ohio draws practically all of the above-mentioned 70,000,000,000 feet, is the chief exporter, furnishing gas in large quantities to New York, Pennsylvania, Indiana and Kentucky, as well.

Hailing West Virginia as the remaining big natural gas reservoir for all of this territory, the report points out the increasing necessity for using gas without waste.

Ohio, the report shows, produces but 43,235,000,000 feet annually, as against her annual consumption of 111,969,000,000 feet.

GAS LINE FROM MONROE TO EL DORADO AREA

EL DORADO, Ark., Sept. 24.—Contracts have been let by the Louisiana-Arkansas Pipe Line Co. of El Dorado to the National Supply Co. for the laying of a 16-inch gas line from the Monroe gas field in northeastern Louisiana to El Dorado. The line will have as its southern terminus Sterlington, La., and construction has to begin within 90 days.

The Louisiana-Arkansas Pipe Line Co. is a newly organized subsidiary of the El Dorado Gas Co., one of the two distributing companies at El Dorado. The line is being built to increase the company's reserves depleted by the rapidly declining pressure and volume in the Smackover Field.

Gas for the line will be taken from the Ouachita Natural Gas Co., producer in the Monroe district. Natural Gas & Fuel Corp., a competitor of the El Dorado Gas Co. at El Dorado, recently leased a pipe line laid by the former Crusader Pipe Line Co. and extending from El Dorado through the Monroe and Richland Parish gas fields.

PROVINCE OF ALBERTA LEADING CANADA IN GAS PRODUCTION

By Victor Lauriston

CHATHAM, Ontario, Sept. 24.—Official figures compiled by the Dominion Bureau of Statistics show that the Province of Alberta in 1926, and in the first six months of 1927, holds the definite lead among the Canadian provinces in natural gas production.

In part, the report of the bureau is as follows:

The natural gas production in Canada during 1926 showed a substantial increase over the total for the preceding year. This year's production amounted to 19,208,209,000 cubic feet valued at $7,557,174; in 1925 the figures were 16,902,897,000 cubic feet worth $6,833,005. The Province of Alberta continues to hold the premier position with a total of 10,794,697,000 cubic feet; Ontario was next in order with 7,764,996,000 cubic feet; and New Brunswick followed with 648,316,000 cubic feet. Average prices per thousand feet were as follows: New Brunswick, 19 cents; Ontario, 56.8 cents; and Alberta, 28 cents.

Alberta's augmented production of natural gas was due in the main part to the increased output of wells in the Turner Valley Field. The bringing in of these wells has insured a dependable supply of gas to the industrial area of Calgary.

Ontario's Record

A summary report by Col. B. B. Harkness, commissioner of gas for Ontario, concerning conditions in the natural gas industry in Ontario during 1926 is given:

Essex County. A new well was drilled on Lot 7, Con. Front Road, with an open flow of 75,000 feet and rock pressure 345 pounds.

Kent County. The Southern Ontario Gas Co. has been working westerly along the shore of Lake Erie from the Tilbury Field and got a very good well just beyond the known western extension of this field in Romney Township. There has been the usual drilling in the old Tilbury Field, fitting in a well where the distance in between wells permitted. In the Dover Field the Union Natural Gas Co. has drilled their twentieth well, Lot 2, Con. 3, Dover West, a small gas well of 600,000 cubic feet to the north of No. 13, which was the largest gas well in the field. They completed a well last fall, some 200 to 300 feet northeast of No. 13, a dry hole. This field has been a great disappointment. It is a long narrow field and the production is pretty spotted; there is still plenty of room for exploration and no reason why another field should not be discovered.

In Howard Township the Union Natural Gas Co. has been purchasing a supply of gas from farmers who have drilled wells in the surface drift, a most surprising gas field. One well had an open flow of over 3,000,000 feet; the average initial rock pressure of the field was about 15 pounds; gas was found at about 120 feet. The gas was put directly into the Ridgetown pressure system. It has supplied that town during the years of 1924-25, 106,681,000 cubic feet. There are about 50 more of these wells supplying gas to the owners for their houses only; they use a low average of 200,000 cubic feet each, a total of 10,000,000 additional per year.

Lambton County. There have been quite a lot of shallow wells drilled in the north half of the county, and quite a number of small gas wells resulted, with two or three small oil wells. The location of these wells is near Aberarder and from there along the south shore of Lake Huron to the city of Sarnia. The deep test being drilled at Arkona is still incomplete; they no sooner got the well clear of obstruction than they lost their drilling tools again. They have been drilling here for nearly four years and have not finished their well. There is no change in the situation elsewhere in Lambton County.

In Dawn Township the Union Natural Gas Co. has done some more driling for gas, but although they have not succeeded in enlarging the field to any extent, they found two producing wells, one of which gave an excellent yield of gas.

Norfolk County. The discovery of gas in Middleton Township has been developed to the limits of the field; it is not as promising as it appeared to be at first; after the winter drain the rock pressure lowered over 50 per cent and the open flow about 60 per cent. It is apparently a very small field.

Perth County. The well being drilled north of Mitchell, in Logan Township, has been completed to the Precambrian, a dry hole.

Brant County. A well has been drilled on Lot 13, Con. 3, of Turcarora. No. gas or oil in commercial quantities was found in the Clinton or Medina-Cataract and the test was carried to the Trenton, a dry hole.

Wentworth County. Near the village of Alberton, in Ancaster Township, on Lot 20-21, Con 9, a well was located by means of a divining rod and the test carried to the Precambrian; only a trace of oil was found and this in the Trenton limestone.

Haldimand County. The usual number

(Continued on Page 132)

HOUSTON PIPE LINE TO MAKE EXTENSIONS

HOUSTON, Tex., Sept. 24.—The board of directors of the Houston Pipe Line Co. has authorized the construction of a 36-mile natural gas line from Freeport to Wadsworth, doubling the line now in operation, which will connect the second line with Houston with compressor station at Edna.

The board authorized the construction of a line from Refugio to White Point, a distance of 28 miles, and the doubling of the Laredo line from Lucas southward.

The construction of these additional lines, with those already laid, is a long step toward doubling the lines into Houston and will give Houston Pipe Line Co. a capacity of 130,000,000 feet of gas for domestic and industrial consumers of Houston daily. The 18-inch high pressure loop eastward from Lucas has been completed and was placed in service early this week.

These four new sections will increase the Houston Pipe Line Co.'s system from 500 to approximately 650 miles. The White Point extension will connect the seventh gas field with the company's system, which now has more than 200 gas wells connected.

NATURAL GAS HANDBOOK IS ON DISTRIBUTION

The recent announcement of the near completion of the fourth edition of the "Handbook of Natural Gas" is supplemented by the formal advertising statement by its publishers, the Metric Metal Works of the American Meter Co., Inc., Erie, Pa., that the book is now off the press and ready for distribution. It contains 584 pages, 181 illustrations, 220 tables, more than half of which are entirely new data.

To quote from the preface of this edition:

"This company has been closely identified with the use and distribution of natural gas for nearly 40 years. During this period it has devoted much time to original research work and has endeavored to furnish reliable engineering information.

"The first data, furnished by the late F. H. Oliphant, a member of the United States Geological Survey, were presented in a simple way as a part of our commercial catalogs. By 1913, however, the industry had so expanded, and such a vast number of men had become interested and employed in it, that it seemed a book devoted entirely to the subject of the production, transportation and distribution of natural gas would be warranted.

"The late H. P. Westcott undertook the editing of our first edition of the 'Handbook of Natural Gas.' His untiring energy and practical knowledge of field work enabled him to present data and tables which were of material service to the industry. The book became so popular that three editions were published. In 1924, before the third edition of this book was exhausted, we lost the services of Mr. Westcott through his untimely death; and then feeling that his editions of the 'Handbook of Natural Gas' had served their purpose, we thought there would be no further call for books of this type.

"The third edition of Westcott's 'Handbook of Natural Gas' was out of print early in 1925, but the demand for it continued and became so insistent that we feit the publication of a similar book was necessary. The matter was therefore put into the hands of our J. C. Diehl, who during the past year has completely revised all data formerly published on this subject and compiled information and tables covering new phases and methods of operation, all of which are now presented in this new book.

"We dedicate our 'Natural Gas Handbook' to the gas industry, in the hope that it may prove helpful to all interested and engaged in the further development of this important business. The publisher desires to express its appreciation to the many operators and engineers who have so kindly assisted the author by furnishing detailed material, without which much of the information in this edition could not have been supplied."

MUSKOGEE GAS LINE

MUSKOGEE, Okla., Sept. 24.—Road crossings have been effected along the route of the D. L. T. Oil & Gas Co.'s 4-inch welded gas pipe line which enters the factory region of northeast Muskogee.

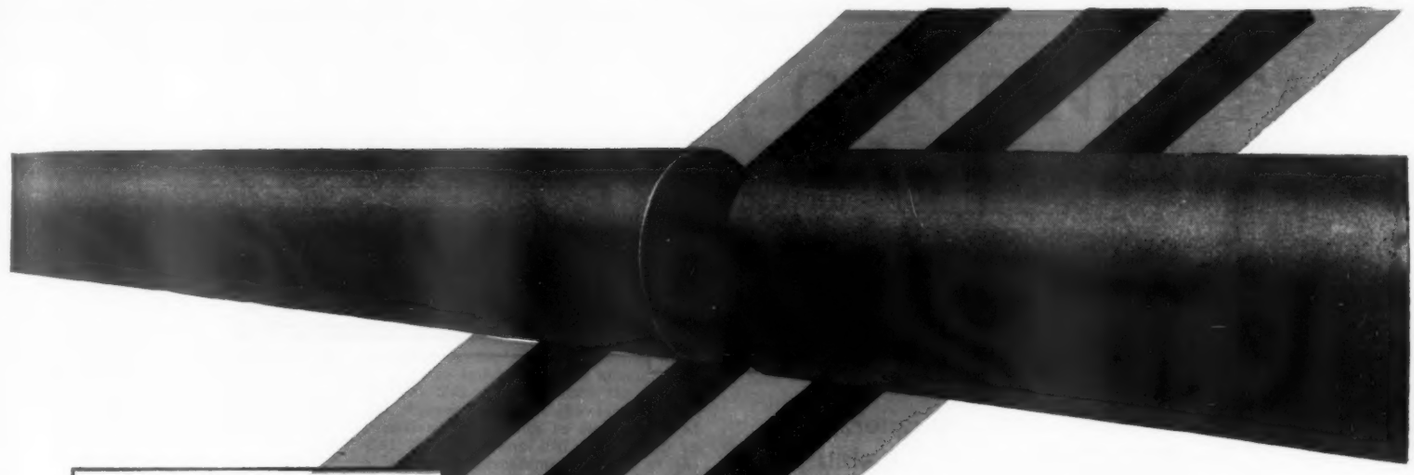
D. L. T. will not supply domestic customers, its project being purely an industrial plant service. The line originates at the D. L. T. Co.'s gas property about a mile and a quarter north and a quarter of a mile east of the Veterans' hospital.

BEGIN SWEETWATER LINE

ABILENE, Tex., Sept. 24.—Work on the Lone Star Gas Co.'s 10-inch welded line from Abilene to Sweetwater will get under way at once, it was announced by T. E. Waddill of Dallas, superintendent. The line will pass through Merkel and Trent. Later, it may be extended to Colorado. A force of 200 men will be employed.

SEYMOUR, TEXAS, WAREHOUSE

SEYMOUR, Tex., Sept. 24. — The city council heard the proposal of C. O. Moore and associates of Stamford to lay a gas line into Seymour. They propose to connect with the Upham Gas Co. at Chillicothe, as they have franchises down the valley. The franchise for Seymour was granted by the council and Mr. Moore guaranteed that work would begin within 60 days and gas would be in the mains through Seymour by January 15, 1928.



Savings *by* Smith

The A.O. Smith method of manufacturing makes it possible to produce 30 ft. lengths in diameters of 16 in. to 22 in. all of uniform length, diameter and thicknesses.

Fewer Joints

Smithsteel Pipe is made plain end and plain end beveled for any field joint. The 30-foot lengths of Smithsteel Pipe will require only 175 joints to the mile as compared with 262 needed for the usual 20-foot lengths of pipe.

Jointing Simpler

Smithsteel Pipe is accurate in both outside and inside diameters. The wall thicknesses are uniform. The joints will butt up evenly at all points making alignment and either welding or coupling simpler and surer. Joining will therefore be quicker and easier.

The Use of Less Metal

Due to the A. O. Smith method of fabricating, and the high quality steel, less metal can be used in the body of the pipe.

Saving the Cost of 87 Joints Every Mile

Smithsteel Gas Line Pipe is made in 16 to 22 inch outside diameters — plain end or plain end beveled for any field joint.

It is made in uniform lengths of 30 feet. The 30 foot lengths will require only 175 joints to the mile as compared with 262 joints needed for the usual 20 foot lengths.

Smithsteel Gas Line Pipe has no random lengths and no untrue diameters. The pipe is accurate in both outside and inside diameters. The wall thickness is uniform (to any specification desired). The joints will butt up evenly at all points making alignment and either welding or coupling quicker and easier.

Other savings possible with this modern product are dealt with in the left-hand column.

A. O. SMITH CORPORATION, *Milwaukee, Wis.*
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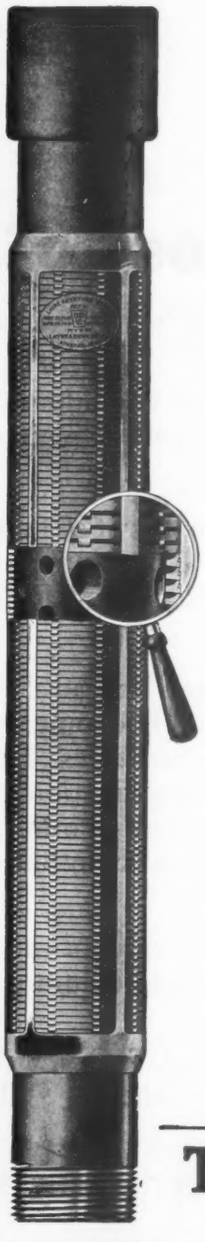
SMITHSTEEL GAS LINE PIPE

THE LAYNE KEYSTONE WIRE WRAPPED SCREEN



The Layne Screen will not Sand-jam or clog

Due to the Keystone shape of the wire with which the Layne Screen is wound (narrow side next to the perforated pipe) the space between the wire is wider next to the pipe than at the outer surface of the screen. This provides a roomy passage through which anything entering the narrow outer opening will flow without possibility of sand-jamming.

Take advantage of our 25 years' experience in solving screening problems.

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PETROLEUM PRODUCTION IN CANADA INCREASED 40.5 PER CENT IN 1927

Official figures compiled by the Dominion Bureau of Statistics at Ottawa show that for the first six months of 1927 the petroleum production of Canada amounted to 244,217 bbls., a daily average of 13,492 bbls., and valued at $776,824. In the same period of 1926 the production was 173,880 bbls. valued at $697,551. This represents an increase of 40.5 per cent in production. The increase in value is only 11.4 per cent, due to the decline in prices.

A report issued at the same time gives revised figures of the 1926 production, together with considerable detail as to results and prospects. The report says in part:

Crude petroleum production in Canada during 1926 showed an encouraging increase over the total for the preceding year. The year's production amounted to 364,444 bbls. valued at $1,311,665; in 1925 the total was 332,001 bbls. worth $1,250,705. Alberta's production, mainly from the Royalite No. 4 wet gas well, topped the high mark of 1925, reaching a new record of 216,050 bbls. A decline was shown in the Ontario production for the year when 137,850 bbls. were produced. Another feature of considerable worth was the proportionately large increase in the New Brunswick production, the 1926 figures being 10,544 bbls. as against 5,376 bbls. in the preceding year.

July 1, 1925, marked the cessation of payment by the Federal Government of bounty on crude petroleum in Canada.

Harkness' Report

Col. R. B. Harkness, commissioner of gas for Ontario, reviews the developments in the petroleum industry in Ontario during 1926 as follows:

"The conditions in the oil fields of Ontario are about the same as in past years. Wells continue to pump a few gallons daily so long as the casing withstands the spring freshets. This spring flood water takes its annual toll of wells, by collapsing the casing which has become too thin, through corrosion, to withstand the strain. Wells which do not produce a sufficient revenue to make it profitable to replace this casing with new material or any available second-hand material are abandoned. In this manner the oil fields of Ontario are gradually passing into history.

"In Zone Township the deep test at Thamesville, Lot 5, Con 3, was finished to the Precambrian with no flow; the well is abandoned. Oil and gas occurred at the base of the sediments. In the easterly part of the same lot, and just over into the northern portion of Lot 4, an extension of the old shallow field has been found; some of the wells have been pumping 10 bbls. for several months. The old Klondike Field in Lot 6, Con. 1, has been revived; one well has been producing 10 bbls. of oil steadily, since the accumulation of water has been pumped off. A small extension of the field, in a northwesterly direction, has been found by drilling. In Lot 5, Con 13, Gore of Camden, a small flow of gas and some oil was found in 1926, but the operators did not consider it worthy of any further expenditure. During the past month, however, a well was drilled near the northern boundary of Lot 5 which had a production of 12 bbls. per hour. A second well has been drilled that appears to be quite as good, and a well drilled in 1926 has the appearance of being quite as good as either one of these, but requires a larger pump to get the best results. It looks very much as if they are going to find a pool in that vicinity, but no estimate can be made of the extent of the field at the present time."

Ross on Western Canada

Oil and gas developments in western Canada during 1926 have been summed up in the following report by C. C. Ross, supervisory engineer of the Northwest Territories and Yukon branch of the Department of the Interior:

"Turner Valley. At the end of the year the wells drilled and nearing completion in this area totaled 22 rigs, of these 16 were spudded in during the year. This impetus to prospecting operations was no doubt solely due to the fact that Royalite No. 4, contrary to all expectation, still maintained, at the beginning of the year, after 15 months' uninterrupted flow, a gas pressure fluctuating in the neighborhood of 700 pounds per square inch and delivering daily between 17,000,000 and 18,000,000 feet of wet gas from which were extracted increasing quantities of high-grade naphtha. Up to the end of 1925 the quantity of the latter extracted amounted to 156,766 bbls.; during 1926 the extraction figures, although showing a slight variation from month to month, showed that this well was still holding up in a manner unprecedented in any of the known oil or gas fields in the world, the total naphtha extraction figures for 1926 being 194,127 bbls.

"The naphtha has a high market value —$4.72½ per barrel. The return from this one well was phenomenal, approximating close to $1,000,000. The effect on the local investing public was instantaneous and increased efforts were at once made to complete the wells in drilling at the commencement of 1926. Also many new companies were formed to operate in this and other areas in Alberta. In the Turner Valley alone 16 wells were started during the year and a total of 42,779 feet of drilling work was accomplished in these wells and exclusive of the amount drilled in wells which had been started prior to 1926.

During the year the only completed wells were the Vulcan No. 1 and the Illinois-Alberta No. 1, the former being 5,005 feet and the latter 3,831 feet. At the Vulcan well the limestone was entered at 4,865 feet; from this depth gas was met at various points, increasing in quantity as the well was deepened, until finally at 5,005 feet the flow was sufficiently strong to lift the cable drilling tools a considerable height in the well where they must have jammed with the drilling cable. In an endeavor to recover the tools the drilling cable broke, but although the latter and the string of tools are still in the hole and must materially impede the free flow of the gas, the daily flow approximates 7,000,000 feet, from which are extracted 140 bbls. of naphtha per day by passing the gas through a separator. That all the naphtha content of the gas is not extracted must be apparent to all who can appreciate the difficulties in adjusting gas separators to a fluctuating pressure and yield.

Tools Are Frozen

"The Illinois-Alberta company, appreciating the dangers of drilling into the gas zone with cable tools, discontinued the use of the latter at 3,678 feet (the limestone having been met at 3,651 feet) and endeavored to complete the well with diamond core drilling tools; difficulties were, however, encountered, said to be due to the high gas pressure freezing the tools. The well was eventually drilled to the depth of 3,857 feet, where a flow of gas estimated at between 4,000,000 and 5,000,000 feet was encountered while the tools were in the well. All efforts to recover the latter proved ineffectual. The well was finally connected to a gas separator, by which means 120 bbls. of naphtha are recovered daily. Again, as at the Vulcan, the residue gas has to be burned wild and distinctly shows that the naphtha content is not completely removed.

"At the McLeod No. 2 well a heavy flow of gas was encountered in August at 3,620 feet. Other flows were met increasing in quantity with depth until a maximum of 10,000,000 feet was encountered at 3,770 feet where, unfortunately, a drilling bit was lost. Efforts to recover the latter have been continued to date without entire success, but im-

(Continued on Page 146)

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OF FORT WORTH
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¶ Soliciting the Accounts of Individuals, Firms and Corporations of Recognized Standing in the Oil Industry.

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ECLIPSE DEEPWELL PULLING MACHINE

Absolute Safety

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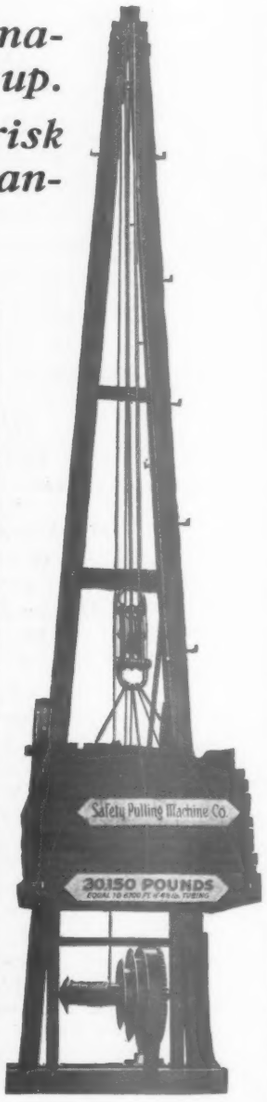
Eclipse Deepwell Pulling Machine

You know the machine will stand up.

Why take the risk of cheap workmanship?



Specifications

DEEPWELL

Eclipse Deepwell up to 8000 ft. 2" Tubing, Weight 3645

Mast 8x10x36 ft., Douglass Fir A-Style Two Wheel Truck, two 16" Bronze bearing crown pulleys, 2¼ Steel Pin mounted in malleable boxings. Large supporting plate 16" dia. between crown pulleys, eliminating any chance of bending pin.

Reel or Drum; 32 lb. 8¼ casing filled with concrete for winding drum, differentials banded with 3/16 band iron, brake surface 6"x40", choke brake style same as Star drilling machine.

The whole reel assembly is mounted on 2¾ square steel shaft extending clear through reel, secured by three heavy castings.

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Manufactured By—

SAFETY PULLING MACHINE CO.

INDEPENDENCE, KANSAS

SHARE OF LANDLORD IN OIL PRODUCTION

The gambling instinct which is an inherent part of every human being originated the custom of paying landowners for oil leases in terms of oil to be produced, says The Lamp. On the operator's side is the desire to keep his drilling expenses down as far as possible. If acreage proves nonproductive he is freed from the need for any considerable payment upon it, and is out of pocket only his drilling cost. The system finds equal favor with the landowner. He looks with favor upon a proposition that makes him a partner with the capitalist who is going to spend a great many thousand dollars to learn whether or not there is oil in that locality, but a participating partner only in the event of success.

Almost invariably, a lease in the oil country is negotiated in consideration of a cash or stock bonus and a royalty of from 10 per cent of the oil up. Also the landowner receives rental until a well is drilled in. It is rare, of course, that the owner of the royalty actually accepts the oil. He gets a credit for his share at the current posted price for crude in the locality, and that is as good as cash.

The allotment of a percentage oil royalty is pretty well established regardless of other considerations, and practically all leases are made on that basis. That by no means covers the full cost. Always there is some other consideration, and where leases are made in proven territory this may amount to big money. Some of the Osage lands in Oklahoma have brought at auction close to $2,000,000 for 160 acres with an additional payment of one-sixth of the oil as minimum royalty. The biggest money was paid for acreage in Burbank, where it was almost a foregone conclusion that wells would prove very productive and where there existed at the time a much higher price for oil than now prevails. At $12,500 an acre, some of the Burbank wells cost $125,000 each before the derrick went up.

Wildcatting Different

A far different picture is presented by a pure wildcatting proposition, where the operator undertakes a substantial financial risk and the owner of the land none. Here a lease may be executed for a nominal consideration of $1, or the landowner may himself offer a bonus of some kind as an inducement to have a test well put down. The royalty eighth may or may not prove important, depending on the drill. Where a wildcatter locates oil after making such a trade, not only is he likely to make a large amount of money, but the landowner too, by being placed in a position where he no longer has unproven acreage to offer, profits handsomely on subsequent leases.

So old and well established is the custom of royalty leasing that state legislation has been enacted to surround it with safeguards. Unsophisticated ranchers or government wards could not be trusted to take care of their own interests always, so that in some places not all of the royalties can be legally sold by the owner of the land. Quite often, the owner of the eighth or sixth royalty splits it up into small pieces and sells sixty-fourths or less to convert part of a risk or promise of the future into immediate funds in the bank.

Serious Consequences

Sometimes the fact of the royalty provision in the lease has serious consequences which the law unwittingly encourages. These arise from the difference in the motives and responsibilities of the producing company and the owner of the acreage. The latter is sure of one-eighth of the oil without any expense to him. Thus in a sense he is independent of the market conditions for crude, since he gets his eighth regardless of the fact that his oil may be going into storage. When low prices prevail it is often found that the only people in the producing business who are making money are the royalty owners. The big company or the individual operator is carrying all the expense and doing all the work while selling oil at cost. The royalty owner sits back, feeling perhaps none too happy over the low prices his oil brings, but at the same time free from any expense in that condition. He insists on compliance with the terms even though they involve drilling new wells that have small prospect of paying out.

Seminole Illustration

A typical situation of this kind has been experienced in the rich Seminole City Field. The first well there to produce from the Wilcox sand was the Independent Oil & Gas Co.'s No. 1 Fixico. This well came in when there was no real overproduction, in July, 1926. There followed immediately a rush on the part of every leaseowner near by to get one or more wells drilled. No one was willing to allow the discoverer to produce from 6,000 to 8,000 bbls. a day from his well without drilling upon his nearby leases. But suppose the improbable, that a number of operators who had contiguous leases foresaw overproduction if the new territory were drilled up and agreed to delay operations. The landowners who had leased their acres, and who in turn had in some cases sold fractional interests in their eighth royalty would not stand by and see their chances depreciated by drainage into the producing well. The law makes it compulsory to drill offsets to producing wells and those interested in the royalty from surrounding leases would undoubtedly have demanded that wells be drilled even if the price of crude had gone down to 10 cents a barrel. They cannot be blamed for lack of concern as to whether the operators make money or not. The royalty owners wanted their wells drilled before the pressure which made wells flow thousands of barrels every day subsided and made the field a pumping proposition. The completion of the Fixico well may easily have caused the drilling of 50 other wells, and the completion of many of these in turn forced the spread of drilling farther out. Mose of these wells could not have remained undrilled long without objection from the royalty owners.

Sometimes other reasons dictate drilling regardless of the market for oil. Leases may have been taken that require the drilling of one or more wells within a stated period or which promised continuous development. Or leases may have neared the expiration date, for which a well had to be drilled if the lease were not surrendered. In the latter event the drilling of a well to production automatically extends the life of the lease for as long a time as oil or gas is found in paying quantities.

OKLAHOMA DISTRICT CONSERVATION OFFICERS

The Corporation Commission of Oklahoma announces the following list of the district conservation officers for the commission giving their name, address and telephone number together with the territory they cover.

Frank Allen, Holdenville, Okla., Box 202. Phone 468. All of Hughes, and that part of Pittsburg County west of Range 15, and all of Seminole County except Range 5e, and 9n and 10n of Range 6e.

John Benton, Duncan, Okla., Box 334. Phone, office, 400; residence, 1073. All of Stephens, Comanche, Grady, Caddo, Cotton, Tillman, Kiowa, Beckham, Greer, Harmon, Jackson, Washita, Canadian, Custer, Roger Mills, and Townships 3 and 4, south of Jefferson County.

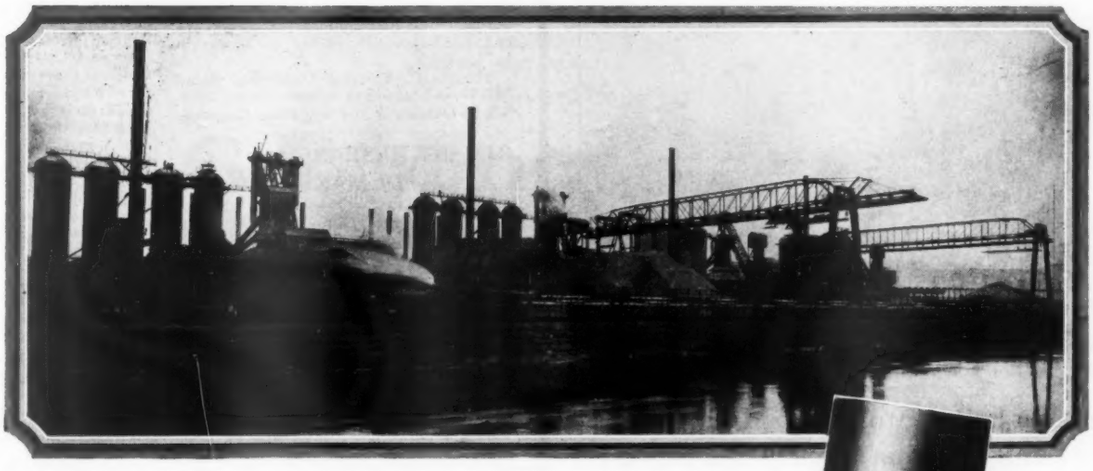
Clyde Dyer, Ardmore, Okla. Phone 853. Box 872. All of Carter, Marshall, Murray, Garvin, Coal, Pontotoc, Love, Johnston, Atoka, Bryan, Choctaw, McCurtain, Pushmataha and McClain Counties, and Townships 5, 6, 7 and 8 south of Jefferson County and LeFlore County, south of 2n.

Eugene Hagan, Tulsa, Okla., 506 Tulsa Trust Building. Phone, office 3-1158; residence, 3-4763. All of Tulsa, Pawnee and Rogers Counties and 19 north of Creek County.

Edward C. King, Tulsa, Okla., 320 South Phoenix Avenue. Phone 2-7926. All of Payne and Lincoln Counties and all of Creek County except 19n.

L. D. Looney, Nowata, Okla., 802 East Cherokee, Box 364. Phone 107. All of Nowata, Washington, Craig, and Ottawa Counties, part of Mays, Delaware, Chero-

YOUNGSTOWN



A Trainload of -GOOD PIPE- —for the Empire 20-inch Gas Line

The photograph shows the first trainload of Youngstown 20-inch steel pipe leaving Youngstown for use in the Empire Gas & Fuel Company's gas line from Amarillo to Wichita, Kansas. Empire is putting into this line more than 400 million pounds of pipe. The Empire Companies have been large users of Youngstown pipe. They know from experience that every pound of Youngstown pipe that goes into an installation will deliver full value.

The Youngstown Sheet and Tube company—America's largest independent manufacturer of tubular steel products—conducts every step in the production of Youngstown pipe from ore to finished product. Selected steel, advanced designs and rigid inspections combine, in their 22 tube mills, to produce a brand of pipe that for 20 years has given satisfaction in every important oil field.

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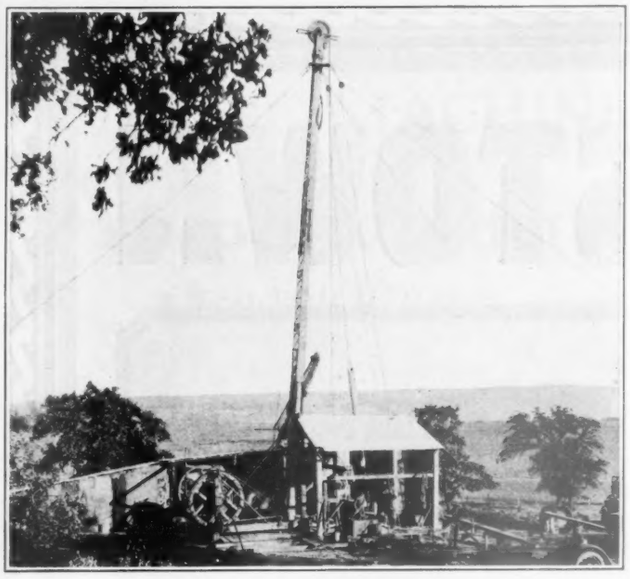

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kee and Adair Counties, north of Township 18n.

S. L. Shores, Shawnee, Okla., 1001 North Broadway Street. Phone 1758. All of Pottawatomie, Cleveland and Oklahoma Counties and Range 5e and 9n and 10n of Range 6e, Seminole County.

John L. Smith, Ponca City, Okla., Box 1142. Phone 1489-J, or Box 282, Phone 449, Blackwell, Okla. All of Kay, Garfield, Noble, Grant, Alfalfa, Woods, Major, Harper, Beaver, Woodward, Ellis, Logan, Cimarron, Texas, Kingfisher, Dewey and Blaine Counties.

W. N. Stahl, Jr., Muskogee, Okla. Phone 5559-W. Box 427. All of Muskogee, McIntosh, Wagner, Haskell, Latimer and Sequoyah Counties, and part of Cherokee and Adair, south of Township 18, part of Pittsburgh east of Range 14 and LeFlore south as far as Township 1n.

Thomas C. Vaughn, Okmulgee, Okla., 304 West Thirteenth Street. Phone 3805. All of Okmulgee and Okfuskee Counties.

RECENT RESEARCH IN MAKING OF OIL

(Continued from Page 59)

basins are everywhere dotted with oil derricks.

It is believed that the organic material which contributes most to the origin of oil is the abundant microscopic life in shallow sea water, commonly referred to as plankton. Minute plants known as diatoms are perhaps most important. In California there are rock sheets thousands of feet in thickness which consist almost entirely of the remains of diatoms. These diatomaceous rocks are in close association with oil fields and are themselves oil bearing at places. For years they have been suspected as the possible source of California petroleum. Microscopic animals, known as foraminifera, also abound in the plankton, and their remains make up a large part of much of the material penetrated in oil wells. Plant spores and resinous parts of plant remains are also conspicuous in organic rock beds, particularly in the oil shales of our western states.

Recent Research

It has generally been assumed that it is the decay of organic remains, possibly assisted by bacterial activity, which makes petroleum. The recent contribution to our knowledge on this subject through the American Petroleum Institute research projects, mentioned above, is of particular interest, therefore, because it proves that oil is actually generated by some forms of life before death intervenes. This would make oil a direct product of vital processes of living creatures rather than a result of the slow decay and slow distillation of dead organic matter.

Prof. C. F. Tolman, of Stanford University, who, with several associates, carried out the research project in question, took up the study of living diatoms in the hope that from their life history he might learn something which would bear on the suspected relation of the great deposits of fossil diatoms to the oil in the California fields. He found that at places along the modern beaches of the Pacific Coast "diatom epidemics" take place, during which thousands of tons of diatoms are washed up by the surf, and that this diatom debris contains a large proportion of oil. He and his associates collected and analyzed samples of this oil and found it to consist of hydrocarbons and sulphur. California oil, like other crude oil, is essentially a mixture of hydrocarbons, but remarkably enough in this connection, it is distinguished generally by a high sulphur content. Moreover, these investigators were able actually to observe the direct manufacture of this oil by the living diatoms. Under the stimulus of sunlight the plant is able to break up carbon dioxide and water to form hydrocarbons.

Diatom Epidemics

Probably this oil would eventually be consumed by the organism under normal conditions, but in the case of great epidemics, such as those under observation, the oil, along with other remains of the diatom, becomes a part of the sea bottom ooze. These epidemics occur, apparently, in connection with an unusual influx of fresh water into the ocean, due to flood conditions on land. In fresh water the shell of the marine diatom breaks up and the oil which it contains escapes into the surrounding jelly-like medium, where it is absorbed and held.

Curiously enough the fossil diatom beds of the California oil fields manifest most evidence of oil where the diatom remains are not well preserved, and the beds which are composed entirely of diatom skeletons and shells intact and unbroken often show little or no oil. This apparent anomaly, which has always puzzled previous investigators who have sought to connect diatoms with the source materials of California oil, now takes on a new and important significance in the light of Professor Tolman's work. It is just what might be expected from his findings that vast quantities of diatoms perish prematurely when fresh water floods their abode, and that in such occurrences their shells are broken to fragments and the store of oil which they have manufactured is absorbed by the debris of their remains and carried down to the bottom. On the other hand, under normal conditions the diatom lives, consumes the oil in vital processes, and finally dies, so that his empty shell falls to the bottom intact, to become a part of pure diatom beds, barren of oil.

Thus does our study of the origin of oil progress. If the other research projects financed through the American Petroleum Institute are equally fruitful, we must experience a real advance in our fundamental knowledge of petroleum.

MONROE GAS SUMMARY SEMIANNUAL SURVEY

SHREVEPORT, La., Sept. 26.—The Monroe gas field of northeastern Louisiana has 484 producing gas wells, owned by 49 operators, according to the semiannual survey of the field by the Louisiana Department of Conservation, just completed. A summary of the total gas volume and pressure as determined in the semiannual regauging of wells has not been completed.

Southern Carbon Co. is the biggest producer in the field with 108 wells. Union Carbon Co. has 56 wells, Natural Gas Producing Co. 51, Ladell Properties, Inc., 46, Palmer Corp. 26, J. M. Huber 20 and Ouachita Natural Gas Co. 19.

The regauging also was extended to the new Richland Parish Field at Rayville, 15 miles southeast of the Monroe Field. There are eight producers there, according to the survey, as of September 1, having an open flow capacity of 151,849,040 feet of gas and an average rock pressure of 1,093 pounds.

NEW YORK GASOLINE TAX

A gasoline tax as an additional source of state revenue was discussed at the conference of the New York State Tax Commission and the Joint Legislative Committee on Taxation and Retrenchment. The discussion indicated that the legislators present believed a levy on gasoline would be authorized at the next session of the legislature. The various proposals for a gasoline tax in New York State will be discussed at a series of meetings which have been arranged for by H. K. Maples, vice president of the New York Automobile Club and a member of the legislative committee of the New York State Automobile Association.

RUSSIAN USE OF PUMPS

Prior to the world war only 3 per cent of Russian oil producing wells were equipped with mechanical devices, the remainder being bailed. During the current year from 35 to 36 per cent of all the oil produced in Russia is from wells equipped with deep pumps. The use of the pumps reduced the cost of oil nearly half. Drilling costs have also been greatly reduced by the introduction of the American rotary and rope methods, which have also accelerated the speed of drilling.

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Sub-cooling—Partial—Reflux
Shell-and-Tube, Atmospheric, and Condenser Box Types
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OIL HEATERS
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The G-R Mineral Seal Oil Heat Exchanger

Strictly counter-current flow.

All oil connections at same end.

Easy to inspect, clean and transport.

Positive provisions against expansion strains.

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The Griscom-Russell Co., 285 Madison Ave., New York

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Franklin Valveless Oil and Gas Drilling and Pumping Engines grow more popular and more numerous every day with producers who used to think that steam was the only power for drilling or pumping.

And Why Not ?

FRANKLIN Valveless Engines were "born" in 1879 almost in the shadow of the first "petroleum well" ever drilled and for 47 years have been used exclusively for oil, gas and artesian drilling and pumping. Their appearance in the mid-continent field is fairly recent, but with a record of thousands, yes, *thousands* of successful jobs in the eastern area behind them, it is not surprising that Franklin Valveless finds growing popularity in the fields where speedy, economical drilling and pumping is most appreciated.

Steam has always been the prime favorite in this section but with the margin of profit between operating costs and contract prices growing narrower every day, a more economical and satisfactory power unit finds quick favor.

$20.00 Saved Per Day

The cost of fuel for a Franklin Valveless Engine is actually less than that of a Ford automobile! Lubricating costs are absurdly low, and 100 barrels of water is sufficient for both cooling and mud-mixing for 1000 ft. of hole. $20.00 or more saved per day is the report from operators who have changed over to this simple, sturdy engine.

And the old idea about oil engines not being flexible goes by the boards when you first see a Franklin Valveless on the job. Depth or ground conditions make no difference to its smooth, dependable flow of power.

You Take No Risk

When the Franklin Engine was first introduced it was necessary to qualify the sale with an absolute guarantee. That clause has become obsolete and unnecessary, for we have never had a customer who was dissatisfied with Franklin performance.

While an inexperienced crew can set up and operate the Franklin Valveless without trouble or delay, our distributors will dispatch an expert factory mechanic to your locations upon request.

Write today for catalog and detailed information.

FRANKLIN VALVELESS ENGINE FEATURES

1—It is a single cylinder, three port, two cycle, valveless engine.

2—The cylinder—instead of being cast integral with the outer wall of the water jacket and bolted to the frame—consists of a liner which is inserted in the frame and securely held in position by the cylinder head.

3—Metal in the frame is properly distributed to give greatest possible strength.

4—Of enclosed type—but easily accessible.

5—Crankshaft very heavy and well proportioned. Counter-weights for balancing the reciprocating parts are secured to the shaft by means of U bolts and keys.

6—All bearings and gears run in a bath of oil—insuring perfect lubrication.

7—By change of cylinder head the engine is suitable for operation with either oil or gas.

8—*Drilling engine can be replaced with pumping engine without changing a single bolt on the original engine bed!*

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THE first Company organized exclusively to serve the Petroleum Industry as Electrical Engineers and Contractors. During the past eight years we have been active in this capacity in the Mid-Continent Oil Fields. This is especially true of the Seminole District, where more than 80% of the electrical contract installations have been made by our Company.

A warehouse and service station is maintained at Wewoka, with supplies and expert electricians to give *"instant"* service to the oil companies.

The Following is a Partial List of the Leading Companies Whom We Have Served:

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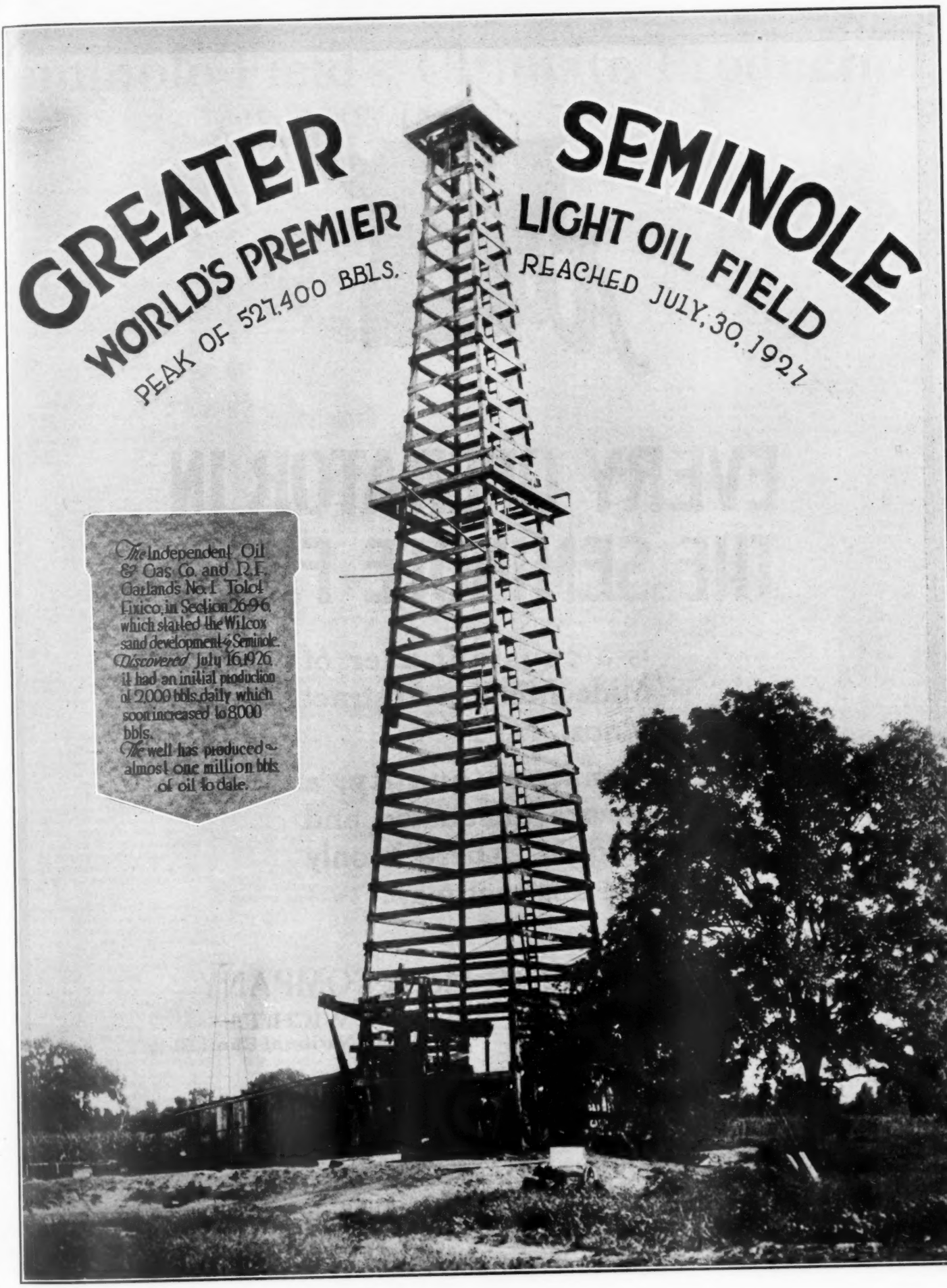
GREATER SEMINOLE
WORLD'S PREMIER LIGHT OIL FIELD
PEAK OF 527,400 BBLS. REACHED JULY, 30, 1927
The Independent Oil & Gas Co. and R.F. Garland's No. 1 Tolol Fixico, in Section 26-9-6, which started the Wilcox sand development of Seminole. Discovered July 16, 1926, it had an initial production of 2,000 bbls. daily which soon increased to 8,000 bbls.
The well has produced almost one million bbls. of oil to date.

EVERY OPERATOR IN THE SEMINOLE FIELD

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MAPS THAT RENDER A REAL SERVICE

Seminole Field's Ultimate Production

Total Output of Other Notable Pools Show What Seminole Must Do To Join the Leaders in the Years to Come

By James McIntyre

What will the Seminole Field produce?

By September 15, 1928, it is estimated that it will have had an output of at least 170,000,000 bbls.

It may do much more than that, and also it may do less.

Seminole makes fools of prophets.

But if we credit it with 75,000,000 bbls. production in the next 12 months it will hit the 170 000,000-bbl. mark, as up to September 15 of this year it had produced around 98 000,000 bbls. and was going strong at 426 000 bbls a day with a new pool, Little River, developing and threatening to push production up to 500.-000 bbls. a day for the entire area.

Recently when W. S. Farish, president of the Humble Oil & Refining Co. made an estimate of 255,000,000 bbls. as the ultimate production of the Yates Pool in Pecos County, Texas, oil companies turned to their statisticians for records of pools that have produced that much oil ,and some statisticians in turn appealed to The Oil and Gas Journal for help in supplying the data.

The writer had already made up a table showing production of the leading pools of the United States, up to August 1, 1927, starting out to include only those that had reached the 100,000,000 bbl. mark, but ending with data on a number of other notable pools that had not yet reached that figure.

Only 17 pools in the United States had produced 100,000,000 bbls. up to the first day of August of this year. By October 1, the combined production of the five Seminole pools in the Seminole area will have passed 100,000,000 bbls. but no one of the five will have produced three-fifths of that quantity.

Mr. Farish's estimate on the ultimate production of the Yates Pool also called attention to the possibilities of the Seminole area.

Will it make 255,000,000 bbls.?

It is a highly debatable question. One can get a hot argument on it any place where oil men familiar with the Seminole Field and its vagries gather.

The writer is of the opinion now that if Seminole produces 175,000,000 bbls. by the close of 1928 it will have yielded body and soul, so to speak, and will have little left to draw upon, but with frankness it is admitted that this opinion is subject to any change, because of Seminole's waywardness and its tendency to do the unexpected.

Midway-Sunset's Great Record

Now let us get down to the fields that have made the biggest records of oil production in this country, the largest being the Midway-Sunset Field in California which has yielded the enormous total of 604,207,853 bbls. in about 26 years, a record unapproached by any other field in the United States and nearly as much as the combined production of Cushing, Glenn Pool and Healdton, the biggest producers in Oklahoma and 7,000,000 bbls. more than the combined production of the Seminole area, Sour Lake, Spindletop, Powell, Mexia, Tonkawa, and Humble Pools. A remarkable feature of this great field is that after 26 years it is producing over 86,000 bbls. a day and can exceed that quantity any time it is called upon.

Just two high-grade-oil pools have passed 255,000,000 bbls.. Bradford and Cushing. Bradford, McKean County, Pennsylvania, is credited with a production of 259,040,000 bbls. from 1875 up to August 1, 1927, a period of 52 years. It is producing 14,000 bbls. now. Cushing, Creek County, Oklahoma, produced 281,086 929 bbls. from 1912 to August 1, 1927, 15 years. It is making 21,000 bbls. a day at present.

In California, three pools producing heavy gravity oil have exceeded the maximum estimate on the Yates Pool. The Midway-Sunset Field produced 604,207,-853 bbls. from 1901 to the present. Coalinga produced 301,642,013 bbls. from 1896 to the present. Kern River produced 262,983,295 bbls. commencing with the year 1900.

PRODUCTION RECORD OF LEADING FIELDS
From Their Beginning Down to August 1, 1927

Year Opened	Field—	Total Bbls.	Daily Prodn. 9-15-27 Bbls.
1901	Midway-Sunset, California	604,207,853	86,200
1896	Coalinga, California	301,642,013	19,600
1912	Cushing, Oklahoma	281,086,929	21,000
1900	Kern River, California	262,983,295	16,000
1875	Bradford, Pennsylvania	259,040,000	14,000
1921	Long Beach, California	245,410,954	91,500
1922	Smackover, Arkansas	232,307,460	89,100
1889	Salt Creek, Wyoming	187,260,400	33,400
1906	Glenn Pool-Kiefer, Oklahoma	185,836 830	6,000
1920	Santa Fe Springs, California	162,980,703	40,500
1913	Healdton, Oklahoma	146,251,256	14,700
1920	Burbank, Oklahoma	136,014,093	36,500
1902	Santa Maria, California	120,605,148	5,700
1897	Fullerton, California	119,695,201	17,500
1920	Huntington Beach, California	117,224,000	68,000
1906	Caddo, Louisiana	116,949,000	20,300
1912	Coyote, California	115,002 648	13,500
1905	Humble, Texas	99,100,000	5,900
1922	Tonkawa, Oklahoma	94,046,825	19,000
1921	Mexia, Texas	93,810,953	10,100
1923	Powell, Texas	83 958,147	15,200
1902	Spindletop, Texas	75,558,000	57,000
1904	Sour Lake, Texas	70,500 000	4,150
1926	Seminole area, Oklahoma	80,789,557	426,162

Many Fall Short

Great fields that have helped to make history in the oil business fell far short of 255,000 000 bbls. up to date, and some of them will never reach that figure unless deeper drilling develops production not now known or dreamed of. The great Spindletop Field in the Texas Gulf Coast brought in in 1902 has produced only 75,558,000 bbls. and the equally notable Humble Field in the same district, has produced only 99,100,000 bbls. in its 22 years of life. The Sour Lake Field, in the Gulf Coast, has produced 70,500,000 bbls. in 24 years.

The Salt Creek Field in Wyoming may reach 255,000,000 bbls. ultimately because of its deeper sands which have not yet been developed but are known to contain a large volume of crude. The field has produced 187,260,400 bbls. of high-grade crude. It is producing 33,400 bbls. but could do 134,000 bbls. if called upon. Its big deep-sand wells are shut in.

The Smackover Field in Arkansas, from its several sands producing heavy and light oil has produced 232,307,460 bbls., and may reach 255,000,000 bbls., ultimately, as the field is yet young.

The celebrated old Glenn Pool, with its Kiefer extension, in Oklahoma, produced only 185,836 830 bbls. since 1905.

Long Beach Will Make It

The Long Beach, Calif., Field, with a record of 245,410,954 bbls. of high-grade oil will easily pass the 255,000,000-bbl. mark. It is good for 91,500 bbls. a day at present.

The combined production of Mexia and Powell, in East Central Texas had reached 177,769,100 bbls., but the fields give no indication of ever reaching 255.-000,000 bbls., while the combined production of Spindletop, Sour Lake and Humble, the most prolific pools in the Texas Gulf Coast, are about 10,000,000 bbls. short of the ultimate production which Mr. Farish believes the Yates Pool may yield.

The several pools making up the Seminole Field may exceed 255,000,000 bbls. in production, but none of the pools singly will do it. Up to August 1, 1927, the whole Seminole area had produced 80,-789,557 bbls. and the five pools were making over 426,000 bbls. on September 15. The production of the separate pools up to August 1, was as follows: Seminole, 44,037,411 bbls.; Searight, 8 495,-809 bbls.; Earlsboro, 11,275,470 bbls.; Bowlegs, 16,568,785 bbls.; and Little River, 412,082 bbls..

100,000-Bbls.-a-Day

The first field in the United States to produce 100,000 bbls. a day, or more, was the Bradford Field, lying mainly in McKean County, Pennsylvania, but reaching over into Cattaraugus County, New York to a few miles southwest of Olean. It is a 105,000-acre structure of which 85,000 acres of thick sand rock showed saturation so completely as to make dry holes the occasion of great surprise. Glenn Pool, in Creek County, Oklahoma, a Bartlesville sand (locally called Glenn sand) area was the second high-grade oil pool to make 100,000 bbls. a day. It is credited with 120,000 bbls. a day in 1906, but Spindletop a heavy-oil field in Sou h Texas had passed the 100,000-bbl. mark in 1901. The Midway-Sunset Field in California reached 100 000 bbls. in 1909, but kept on ascending until it hit 150,000 bbls. or more in 1914. Cushing, Creek County, Oklahoma, passed 100 000 bbls. in 1913, passed the 200.-000-bbl. mark in 1914, and the 300,000-bbl. mark in April, 1915. Salt Creek, Wyo., which has been held in check most of the time since it was known to be a large producing field produced in excess of 100,000 bbls. a day in 1919, 1920, 1921, 1922 and 1923. Salt Creek's peak was around 160,000 bbls. in 1923. Burkburnett, Tex., produced 180,000 bbls. one day in 1919, and Breckenridge, Texas, produced around 135,000 bbls. a day early in 1921. In 1923, a number of pools produced more than 100,000 bbls. a day at one time or another. Powell led them all when, in November, it produced 356,000 bbls. a day, but it fell off rapidly thereafter. Burbank, Okla., went to 122,000 bbls.; Huntington Beach, Calif., to 115,000 bbls.; Santa Fe Springs, Calif., to 342,000 bbls.; and Long Beach, Calif., to 256,000 bbls. Other fields in the 100,000-bbls.-a-day class include the Borger Field in Hutchinson County, Texas; Mexia, Tex.; Wortham, Tex.; Haynesville, La., and Tonkawa, Okla. The Crane County Field in West Texas averaged 98,-958 bbls. for a week early this month and it is therefore safe to say that it has hit 100,000 bbls. in a single day. The Tonkawa Field in Oklahoma had two peaks, both of which carried the field well past 100,000 bbls a day, with a peak of 112,000 bbls.

TOTAL PRODUCTION OF GREATER SEMINOLE AREA

The total estimated production of the Greater Seminole area by leases and pools from discovery up to and including September 15, 1927, follows:

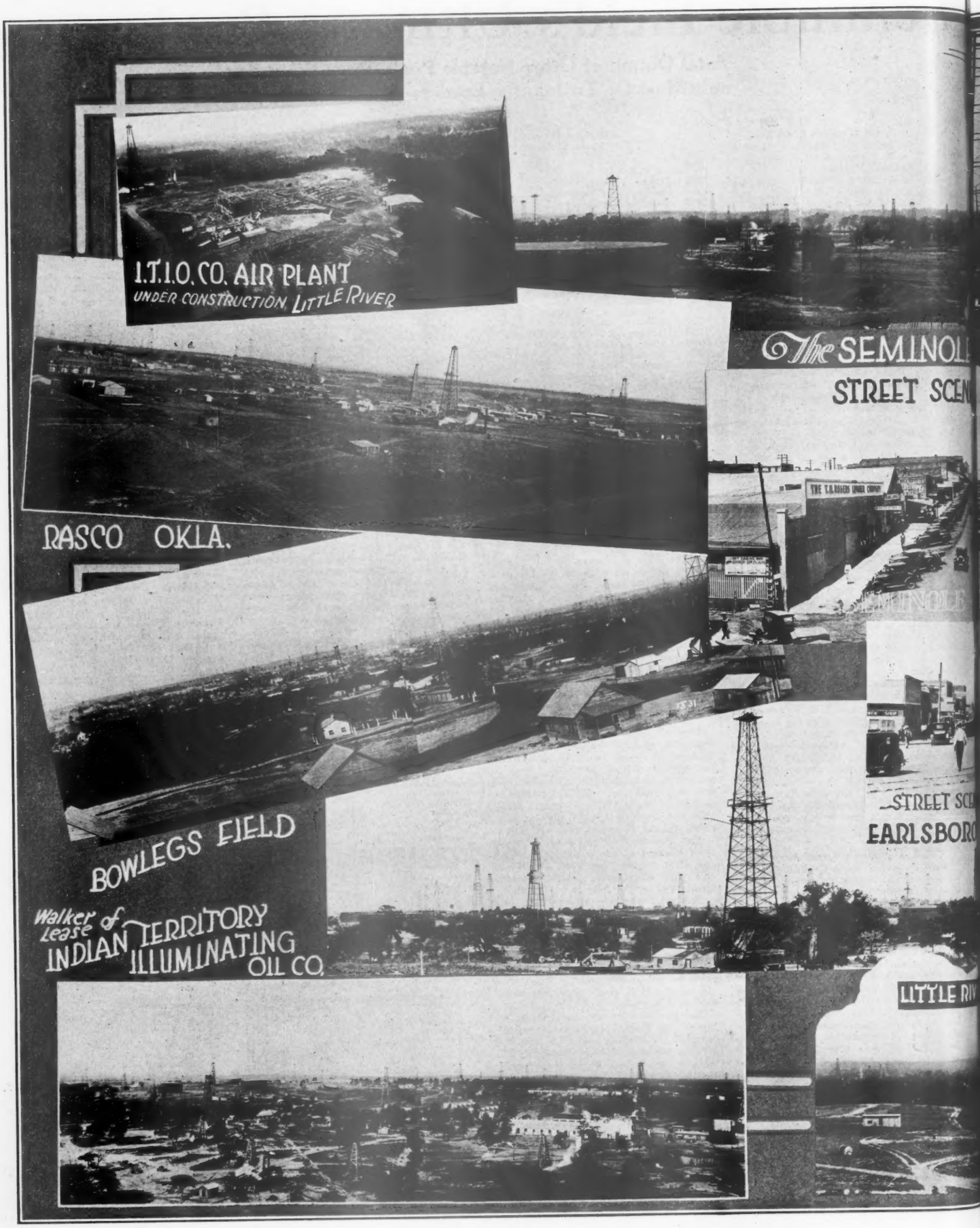
Bowlegs

Amerada Pet. Corp.:	
Rasco	1,802,161
Atlantic O. P. Co.:	
Baker	327,395
Fleet	269,686
Grayson	237,058
Jones	116,768
Barnsdall Oil Co.:	
McNac	8,189
Murrow	120,044
Carter Oil Co.:	
Bowlegs	601,575
Harjoche	485,192
Hilly	182,091
Walker	512,715
Wise	1,094,142
Empire Gas & Fuel:	
Lacy	831,449
Gypsy Oil Co.:	
Brown	18,066
Walker	172,109
Wise	4,590
Independent-Marland:	
Coker	81,345
Indian Terr. Illum. Oil Co	
Barnett	128,284
Billington	179,126
Bowlegs	414,023
Davis	965,128
Fay	172,984
Goforth	1,246,799
Livingston	2,550,814
Lizzie	30,669
Walker	1,130,869
Wilmot	361,373
Work	95,160
Youngblood	369,126
McCulloch Oil Co.:	
Bowlegs	85,653
Mid-Continent Pet. Corp.	
Baker	558,666
Bowlegs	65,063
Hu.ke	35,146
Minnehoma Oil Co.:	
Bowlegs	352,558
Prairie Oil & Gas Co.:	
Gahagan	325,512
Harper	838,422
Templeton	193,487
Whitney	115,406
Pure Oil Co.:	
Reed	2,330,779
Strothers E	775
Roxana Petroleum Corp.:	
Taylor	373,812
Shaffer-Fuhrman:	
Lacy	228,682
Sinclair Oil & Gas:	
Adams	1,430
Bowlegs	44,223
Ellen	201,955
Harjo	757,734
Jones	565,766
Taylor	314,956
Walker	518,700
The Texas Company:	
Reed	805,429
Tidal Oil Co.:	
Harjoche	253,883
Twin-State Oil Co.:	
Jones	98,920
Total Bowlegs	23,566,886

Earlsboro

Amerada Pet. Corp.:	
Anderson	1,687,706
Cowden	1,428,640
Barnsdall Oil Co.:	
D. Davis	191,297
Gibson	1,035,695
Hearn	2,708
Pack	146,757
Peter	100,950
Sebolka	507,980
Sullivan	77,158
Smith	119,795
Wasutka	219,982
Carter Oil Co.:	
Payne	229,640
Continental Oil Co.:	
Spencer	321,510
J. E. Crosbie et al:	
Bryant	806,647
Empire Gas & Fuel Co.:	
Edmundson	523,768
Gypsy Oil Co.:	
Bora	29,451
Carter	82,950
Earl	45,163
McFarland	120,594
Noble	300,094
Pe er	225,372
State	1,111,430
Strain	810
Independent Oil & Gas Co.:	
Knapp	318,386
Odell	504,077
Sullivan	6,615
Interocean Oil Co.:	
Payne	41,820
Magnolia Petroleum Co.:	
Bryant	548,362
Holmsley	1,286,312
Lena	86,916
Simpson	142,795

(Continued on Page 113)


I.T.I.O. CO. AIR PLANT
UNDER CONSTRUCTION, LITTLE RIVER
The SEMINOL
STREET SCEN
RASCO OKLA.
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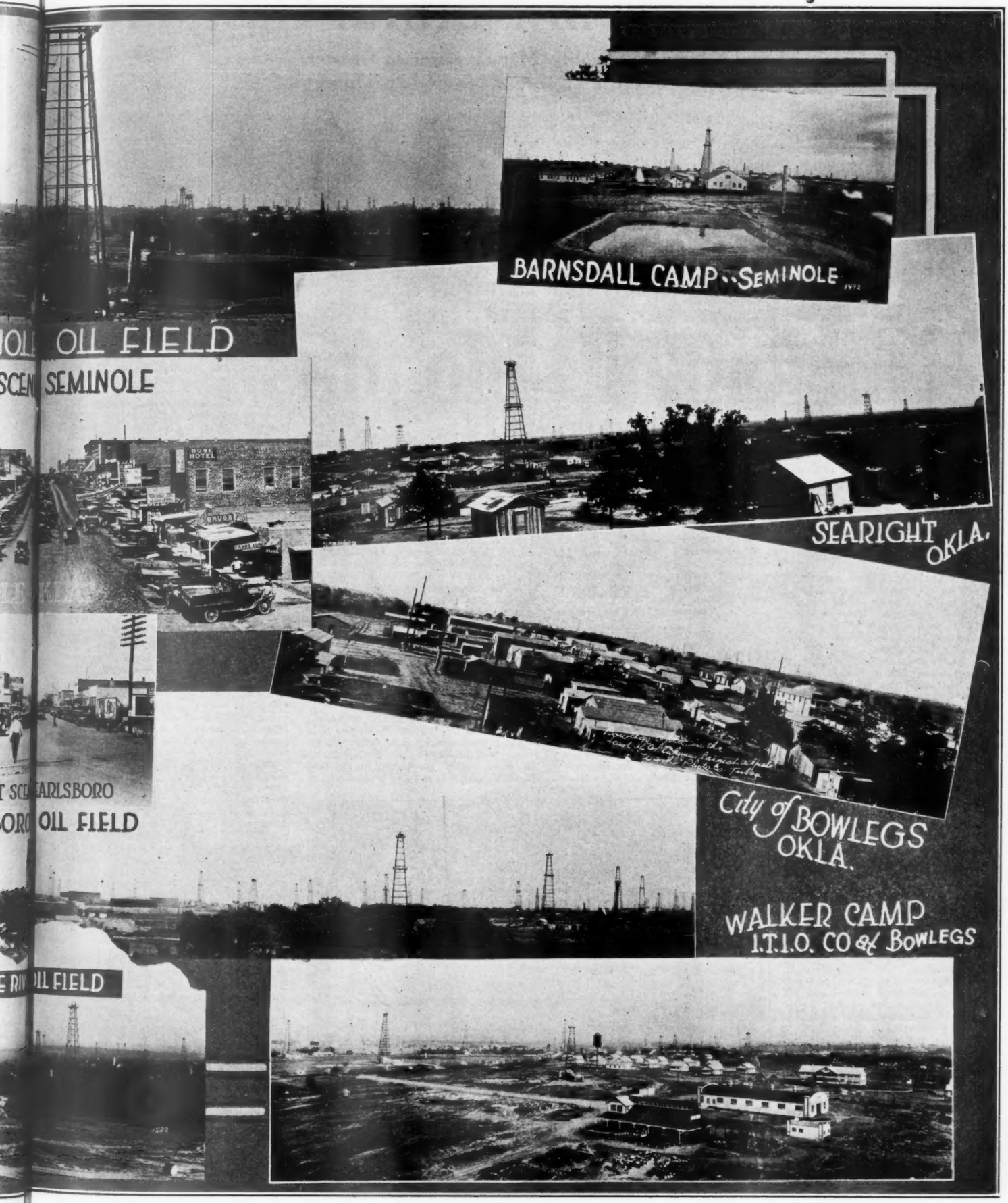
BOWLEGS FIELD
Walker Lease of
INDIAN TERRITORY
ILLUMINATING
OIL CO.
LITTLE RIV


BARNSDALL CAMP .. SEMINOLE
OIL FIELD
SEMINOLE
ROSE HOTEL
DRUGS
SEARIGHT OKLA.
City of BOWLEGS OKLA.
WALKER CAMP
I.T.I.O. CO of BOWLEGS

Bowlegs Leads in Natural Gasoline

Largest Natural Gasoline Manufacturer in Greater Seminole Area. Little River Pool May Add to Output

With a capacity of 335,000 gallons daily, Bowlegs leads all other producing pools of the greater Seminole area from the standpoint of natural gasoline output. The Seminole Pool proper is second with a capacity of 287,500 gallons daily while the Earlsboro Pool is third with a daily capacity of 125,000 gallons daily. The one plant located in the Searight Pool has a capacity of 40,000 gallons daily.

The Little River Pool which is now the center of interest in the producing end does not at this time have a natural gasoline plant. At least one manufacturer, however, has plans completed for the erection of a plant just as soon as conditions justify. At this time the amount of gas available for the operation of a plant cannot be determined. An effort is being made to restrict the crude oil production by shutting in the wells to a small fraction of their normal flow. This action results in a corresponding reduction in the gas flow. Later, should the field prove a large producer of crude oil with no restrictions as to the method of operation, the field no doubt will become a large manufacturer of natural gasoline. The production is coming from the Wilcox sand from which the bulk of the production is obtained in the other pools.

It is estimated that between $15,000,000 and $20 000,000 has already been spent in the Greater Seminole area in the construction of the 39 plants now operating. Considering the present output of approximately 600,000 gallons daily this investment is not large. For the industry as a whole an investment charge of $50 to $60 per gallon of daily production is not considered excessive. This would mean that the present output of the Seminole area would justify an investment of approximately $30,000,000.

Plants Built in Year

This large investment in natural gasoline plant equipment has all been made during the past year. The discovery well of the field was completed a year ago last July. The first well was located on a lease (SE NE, Section 26-9-6) in the old Seminole area, owned by the Independent Oil & Gas Co.

This well had a natural flow of several million cubic feet of casinghead gas with a gasoline content of 4 to 5 gallons per 1,000 cubic feet. No attempt was made to extract the gasoline from this gas the first few weeks. The field was new and it was not known how long the large gas flow would continue. About a year ago however, the Independent company decided to install a portable gasoline plant to handle the gas from this one well. This plant was moved in and set up in about two weeks thus starting the manufacturer of natural gasoline in an area which was destined to become the largest manufacturer within a period of 12 months. This first portable plant actually extracted as high as 22,000 gallons daily of natural gasoline from the gas flow of the discovery well. Later it took care of the casinghead gas of additional wells of the Independent company. This plant is operating at this time.

As additional wells were completed, it became apparent that the field was to become one of the major crude producing areas of the oil industry. The gas flow accompanying the first wells continued to be heavy. Before the end of 1926, several of the major manufacturers already operating in other fields became interested in the field's possibilities. Large construction programs were under way by December of last year.

Rapid Construction

The manner in which the natural gasoline manufacturer with his plants has closely followed the crude oil producer is in contrast to the practice a short time ago. Then it was customary to wait until the crude oil production of a field was on a settled basis before building any gasoline plants. The hazards of new sources of supply was considered too great to justify the necessary expenditure in gasoline plants.

In the development of the Seminole area, however, many of the larger companies have endeavored to provide means for the extraction of the gasoline from the gas just as soon as it was available. This has been done despite unfavorable market conditions. The market at the plants since the field became a large manufacturer of natural gasoline has fluctuated between 4 and 6 cents a gallon. The margin left the manufacturer after paying for the gas and his operating costs has been small. In some cases, unless market conditions improve in the near future, the plants will represent a loss to their owners.

Manufacturers of Equipment

To the manufacturers of equipment used at natural gasoline plants goes part of the credit for the fact that the manufacturers have been able to keep pace with the crude oil producers in the development of the field. The portable and semiportable oil-absorption plants have been placed in operation within 30 days after the orders were placed with the manufacturers. As is generally known, this type of plant has a large overload capacity, a feature which has been widely utilized in the Seminole Field. The gas supply has varied widely in volume from week to week, and it has been impractical to build plants with sufficient capacity to take care of the maximum load. Due to this fact, the practice has been to build plants based on minimum requirements and then operate them from 500 to 300 per cent overload when necessary.

There is, of course, some sacrifice in efficiency from the standpoint of gasoline recovery when these plants are operated with the large overload. However, it has been the only economical method of handling a gas situation which in several respects has had no duplicate in the history of the natural gasoline industry. In this connection, it should be borne in mind that the market structure for the past six months has made necessary a minimum investment in plant equipment with no incentive to secure the maximum gasoline yield in operating methods.

Salvability Important

In the building of the large permanent plants, of which there are several in the field, the manufacturer of equipment has also aided the plant operators. Factory fabricated materials of all kinds are now available which can be assembled quickly after they arrive in the field. Some remarkable records have been made in the construction of these plants.

Regardless of the type of equipment, salvability has been the aim of the manufacturers. Due to the peculiar operating conditions in the field, the manufacturers have never been able to gauge the probable settled gas supply available. Six months or a year from now, it will probably be necessary to make change in the present capacities at the plants, with a possibility that a few at least will find it necessary to remove their equipment to other fields. Due to that fact, manufacturers have installed their equipment so that it could easily be added to or subtracted from with minimum of loss.

Use of Gas Lift

The special problem which the natural gasoline manufacturers are solving in the Seminole area has to do with the air and gas lift in flowing of the wells. This practice, which has had its first major application in the Seminole Field, has been described in previous articles appearing in The Oil and Gas Journal.

When the air lift is used, usually it has not been feasible commercially to recover the gasoline from the gas and mixture as it comes from the well along with the crude oil. This is largely due to the fact that the air and gas mixture under pressure is hazardous to handle in the manufacturing operation. This fact, in several cases, has necessitated special care in the operation of the plants, due to the fact that there was constant danger, when connection was made to several wells, that the gas supply would be contaminated with the air.

In cases where the gas lift is used, the

(Continued on Page 113)

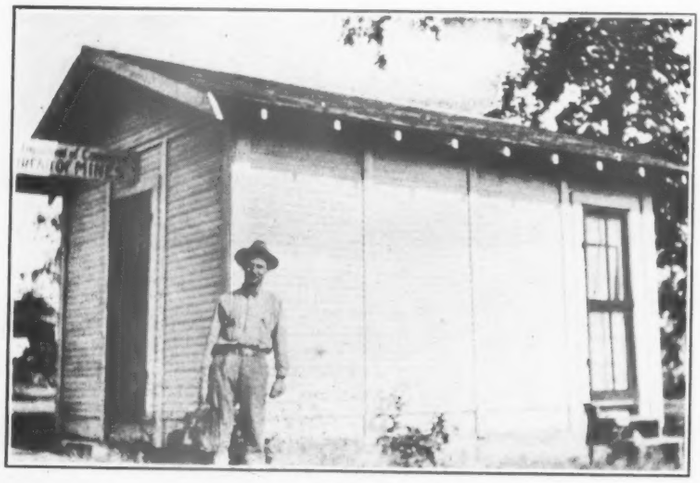
GREATER SEMINOLE NATURAL GASOLINE PRODUCTION BY POOLS

Company—	Location		Type	Capacity
Seminole Pool				
Amerada Petroleum Corp.	SW NE	Section 23-9-6	Comp.	4,500
Carter Oil Co.	NW SW	Section 35-9-6	Absp.	17,000
Carter Oil Co.	SE SE	Section 15-9-6	Absp.	60,000
Empire Gasoline Co.	NW SE	Section 24-9-6	Absp.	36,000
Empire Gasoline Co.	NW NE	Section 34-9-6	Com.	20,000
Independent Oil & Gas Co.	SE NE	Section 26-9-6	Comb.	25,000
Pure Oil Co.	NE SW	Section 26-9-6	Comb.	20,000
Sinclair Oil & Gas Co.	SW NW	Section 35-9-6	Absp.	85,000
Sinclair Oil & Gas Co.	NW SW	Section 35-9-6	Comp.	10,000
Victor Gasoline Co.	SE NW	Section 10-9-6	Comb	10,000
Total, 10 plants				287.500
Bowlegs Pool				
Amerada Petroleum Corp.	SW NW	Section 15-8-6	Absp.	15,000
Empire Gasoline Co.	W ½ SW	Section 14-8-6	Comb.	30,000
Empire Gasoline Co.	SE NW	Section 15-8-6	Absp.	15,000
Empire Gasoline Co.	S ½ NW	Section 13-8-6	Absp.	15,000
Forrest E. Gilmore Co.	NE NW	Section 23-8-6	Comp.	10,000
Forrest E. Gilmore Co.	SW NW	Section 13-8-6	Comp.	10,000
Forrest E. Gilmore Co.	SE SE	Section 10-8-6	Comp.	10,000
Forrest E. Gilmore Co.	SW SE	Section 9-8-6	Comp.	10,000
Pure Oil Co.	SE NW	Section 14-8-6	Comb.	30,000
Roxana Petroleum Corp.	SE NE	Section 16-8-6	Absp.	30,000
Sinclair Oil & Gas Co.	NE NE	Section 22-8-6	Comp.	30,000
Sinclair Oil & Gas Co.	SW NE	Section 10-8-6	Comb.	120,000
Victor Gasoline Co.	SE SW	Section 10-8-6	Comb.	10,000
Total, 13 plants				335.000
Earlsboro Pool				
Amerada Petroleum Corp.	NE	Section 16-9-5	Absp.	20,000
Barnsdall Oil Co.	NE NE	Section 15-9-5	Comp.	40,000
Crosbie Oil Co.	SW NW	Section 9-9-5	Absp.	15,000
Gypsy Oil Co.	C NW	Section 16-9-5	Absp.	30,000
Magnolia Petroleum Co.	NW SE	Section 10-9-5	Comb.	10,000
Victor Gasoline Co.	SW NE	Section 11-9-5	Comb.	10,000
Total, 6 plants				125.000
Searight Pool				
Carter Oil Co.	NW SW	Section 15-9-6	Absp.	40,000
Little River Pool				
No plants				
Grand total, 29 plants				787.500

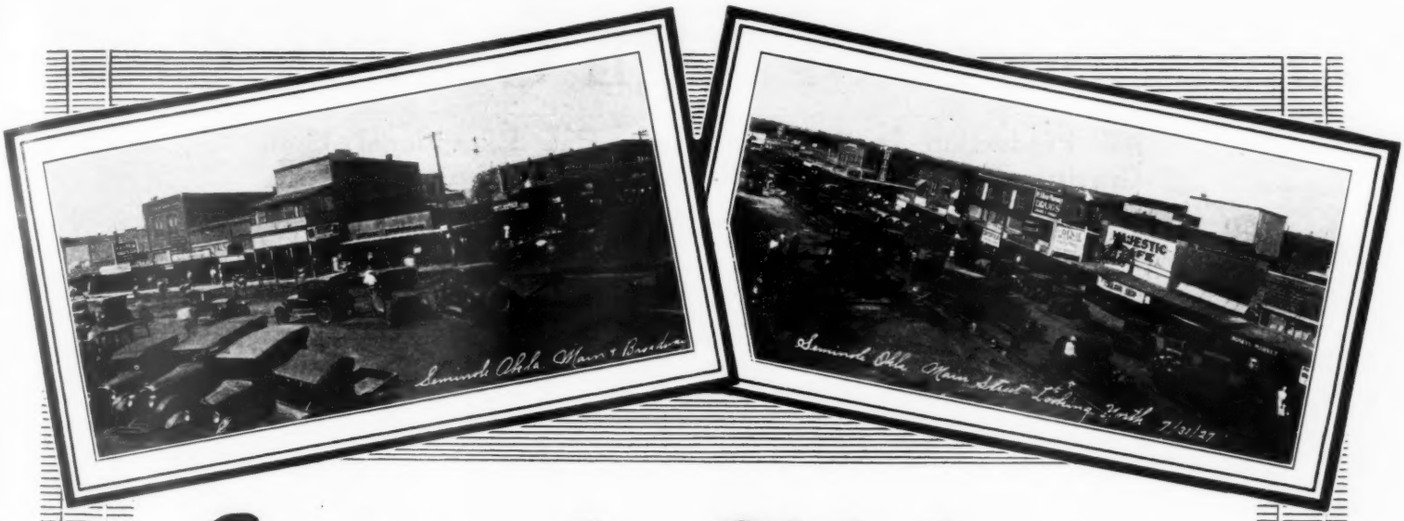
BUREAU OF MINES MAKING STUDY OF CONDITIONS IN SEMINOLE AREA

The Bureau of Mines of the Department of Commerce has been making a study of operating developments in the Seminole area of Oklahoma every since it became apparent that the field would become a major producer of crude oil. The headquarters building for the field is shown in the accompanying view. It is located south of the town of Seminole near the center of the main producing area.

The work is being carried on under the direction of the Bartlesville, Okla., station of the Bureau of Mines. Three engineers from the Bartlesville station have spent several months in investigating various field problems. W. S. Morris, C. R. Bopp and S. W. Swarts of the Bartlesville station have spent several months in investigating various field problems. The data they have collected on the field's operation will be published under the heading of "Engineering Report on the Seminole Area." A preliminary report will be issued in the near future.



W. S. Morris of the engineering staff of the Bureau of Mines in front of headquarters building in the Seminole, Okla., Field.



Seminole, Oklahoma Equipped 100% with EMCO METERS AND REGULATORS

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Major Source of High Gravity Crude

All Production in Seminole Pools Has Exceptional High Gravity. Government Gives Representative Distillation Tests

By A. J. Kraemer
Associate Petroleum Chemist, Bureau of Mines

For a discussion of the methods used by the Bureau of Mines in analyzing crude oil see Bulletin 207[1]. For a discussion of the interpretation of crude oil analyses, see Serial No. 2806[2]. Table 1 summarizes the results of these analyses by presenting some of the figures indicating physical and chemical properties of the crudes. Table 2 presents figures for the gravities of the fractions distilling at atmospheric pressure between 250 and 275 degrees Centigrade, and also the cloud points of the fractions distilling between 275 and 300 degrees Centigrade at 40 mm. absolute pressure. These figures indicate the "base" of a crude oil.

Gravities are reported in A.P.I. degrees. This is the scale formerly known in the American petroleum industry as "Baume," based on the modulus 141.5 as distinguished from the Baume scale based on the modulus 140.0.

[1]Bureau of Mines Bulletin 207, "The Analytical Distillation of Petroleum and Its Products," by E. W. Dean and others. Obtainable from the Government Printing Office, Washington, D. C., at 15 cents a copy.

[2]Smith, N. A. C. The Interpretation of Crude Oil Analyses. Reports of Investigations Bureau of Mines, Serial No. 2806, May, 1927.

Although there are a number of producing sands in the Seminole district, it does not seem possible to ascribe definite and distinctive characteristics to the production from any of the sands. The Wilcox is the most productive sand in all of the pools in the district. On the basis of the samples that the Bureau of Mines has analyzed, (not all of which are included in the report) the gravity of crude oil from the Wilcox sand in this district ranges from 37.6 degrees to 43.2 degrees A.P.I. with the average about 40 degrees A.P.I. The sulphur content ranges from 0.26 per cent to 0.43 per cent with the average about 0.33 per cent. The "gasoline and naphtha" content ranges from 34.1 per cent to 42.3 per cent, with the average about 38.4 per cent. The production from the Hunton lime ranges in gravity between 37.8 degrees and 40.4 degrees A.P.I., with the average about 38.8 degrees A.P.I. The sulphur content ranges from 0.22 per cent to 0.30 per cent, with the average about 0.26 per cent. The "gasoline and naphtha" content of the crude from the Hunton lime ranges from 34.7 per cent to 37.3 per cent, with the average about 36.0 per cent.

TABLE 1
DATA SHOWING SOURCES OF SAMPLES AND SOME OF THE FIGURES INDICATING PHYSICAL AND CHEMICAL PROPERTIES

			Properties of Crude				Gasoline Fraction		Visc. at 100°F. of Vacuum Fractions			
Sample No.	Field, Sand—	Depth Feet	Degrees A.P.I.	% S	Viscosity at 100°F.	Pour Test	Percentage	°A.P.I.	225-250	250-275	275-300	% Carbon of Residue of Residuum
27,335	Seminole, Wilcox	4,136–4,138	39.6	.33	39	(a)	38.6	61.0	61	91	165	7.3
27,339	Seminole, Wilcox	4,128–4,129	39.8	.38	38	(a)	40.1	61.0	60	89	165	7.7
27,240	Bowlegs, Wilcox	4,194–4,200	38.2	.31	43	(a)	37.1	60.8	58	87	165	6.8
27,343	Bowlegs, Wilcox	4,111–4,134	40.9	.30	38	(a)	39.1	62.9	60	93	175	6.8
27,337	Earlsboro, Wilcox	4,230–4,234	43.2	.31	37	(a)	41.7	63.4	61	95	185	6.1
27,236	Earlsboro, Wilcox	4,257–4,283	39.6	.30	46	(a)	34.1	62.6	58	89	165	5.5
27,377	Searight, Wilcox	4,502–4,508	37.6	.35	45	(a)	34.7	60.0	62	99	180	6.5
27,336	Seminole, Hunton	....	37.8	.28	42	(a)	35.3	59.2	60	95	180	6.9
27,381	Searight, Hunton	4,055–4,155	38.2	.24	41	(a)	36.0	59.5	61	93	185	6.0
27,378	Searight, Earlsboro	3,534–3,570	38.4	.20	44	(a)	35.8	60.5	63	100	195	5.3
27,379	Earlsboro, Earlsboro	3,417–3,460	40.2	.25	42	(a)	37.9	62.6	61	95	185	5.4
27,243	Seminole, Cromwell	3,503–3,517	37.8	.14	47	(a)	32.3	59.5	61	91	165	5.1
27,566	Seminole, Viola	4,171–4,256	36.2	.47	45	(a)	34.7	56.7	60	91	168	10.5

(a) Below 5 degrees Fahrenheit.

TABLE 2
DATA INDICATING THE "BASE" OF THE CRUDE OIL

			Fraction distilling at atmospheric pressure between 250-275°C. (527-572°F.)			Fraction distilling at 40 mm. vacuum between 275-300°C. (527-572°F.)
Sample No.	Field, Sand—	Depth ft.	Sp. Gr.	°A.P.I.	Cloud point °F.	Base of crude
27,335	Seminole, Wilcox	4,136–4,138	.840	37.0	80	Intermediate
27,339	Seminole, Wilcox	4,128–4,129	.841	36.8	85	Intermediate
27,240	Bowlegs, Wilcox	4,194–4,200	.838	37.4	80	Intermediate
27,343	Bowlegs, Wilcox	4,111–4,134	.837	37.6	80	Intermediate
27,236	Earlsboro, Wilcox	4,257–4,283	.834	38.2	75	Intermediate
27,337	Earlsboro, Wilcox	4,230–4,234	.841	36.8	80	Intermediate
27,377	Searight, Wilcox	4,502–4,508	.835	38.0	80	Intermediate
27,336	Seminole, Hunton	....	.837	37.6	80	Intermediate
27,381	Searight, Hunton	4,055–4,155	.836	37.8	75	Intermediate
27,378	Searight, Earlsboro	3,534–3,570	.834	38.2	80	Intermediate
27,379	Earlsboro, Earlsboro	3,417–3,460	.833	38.4	80	Intermediate
27,243	Seminole, Cromwell	3,503–3,517	.832	38.6	80	Intermediate
27,566	Seminole, Viola	4,171–4,256	.839	37.2	92	Intermediate
Sample No.	Field, Sand—	Depth				

SAMPLE NUMBER 27,335

Oklahoma, Seminole Field, Seminole County, Indian Territory Illuminating Oil Co.'s Well No. 4, Section 23-9n-6e, Indian, Wilcox sand 4,136-38 feet, Specific gravity, 0.827, A.P.I. gravity, 39.6 degrees; per cent sulphur, 0.33; per cent water, nil; Saybolt Universal viscosity at 70 degrees Fahrenheit, 42 seconds; pour point below 5 degrees Fahrenheit. Saybolt Universal viscosity at 100 degrees Fahrenheit, 39 seconds. Color, green.

DISTILLATION, BUREAU OF MINES HEMPEL METHOD

Air Distillation—Barometer 737 mm. First Drop: 29°C. (84°F.)

Temperature °C	Per cent cut	Sum per cent	Specific Gravity of cut	°A.P.I. Cut	Viscosity at 100°F.	Cloud Test °F.	Temperature °F.
Up to 50	3.3	3.3	0.643	88.6	.....	.....	Up to 122
50- 75	3.4	6.7	.669	80.0	.....	.....	122-167
75-100	6.5	13.2	.709	68.1	.....	.....	167-212
100-125	7.7	20.9	.736	60.8	.....	.....	212-257
125-150	6.6	27.5	.757	55.4	.....	.....	257-302
150-175	5.8	33.3	.777	50.6	.....	.....	302-347
175-200	5.3	38.6	.794	46.7	.....	.....	347-392
200-225	4.9	43.5	.810	43.2	.....	.....	392-437
225-250	5.2	48.7	.826	39.8	.....	.....	437-482
250-275	5.8	54.5	.840	37.0	.....	.....	482-527
Vacuum distillation at 40 mm.							
Up to 200	3.1	3.1	.859	33.2	41	10	Up to 392
200-225	5.3	8.4	.865	32.1	49	25	392-437
225-250	4.6	13.0	.879	29.5	61	45	437-482
250-275	4.1	17.1	.893	27.0	91	65	482-527
275-300	4.9	22.0	.905	24.9	165	80	527-572

Carbon residue of residuum 7.3 per cent. Carbon residue of crude 1.6 per cent.

APPROXIMATE SUMMARY

	Per Cent	Specific Gravity	°A.P.I.	Viscosity
Light gasoline	13.2	0.682	76.0	.....
Total gasoline and naphtha	38.6	.735	61.0	.....
Kerosene distillate	4.9	.810	43.2	.....
Gas oil	17.3	.844	36.2	.....
Nonviscous lubricating distillate	9.8	.866-0.895	31.9-26.6	50-100
Medium lubricating distillate	5.9	.895- .909	26.6-24.2	100-200
Viscous lubricating distillate	....	...	...	Above 200
Residuum	22.1	0.958	16.2	.....
Distillation loss	1.4	...	...	.....

SAMPLE NUMBER 27,243

Oklahoma, Seminole Field, Seminole County; T. B. Slick Oil Co., Franks Well No. 8, Section 35-9-6 Indian, Cromwell sand (?) 3,503-3,517 feet; specific gravity, 0.836; A.P.I. gravity, 37.8; per cent sulphur, 0.14; per cent water, nil; Saybolt Universal viscosity at 70 degrees Fahrenheit, 52 seconds; pour point below 5 degrees Fahrenheit; Saybolt Universal viscosity at 100 degrees Fahrenheit, 47 seconds. Color, green.

DISTILLATION, BUREAU OF MINES HEMPEL METHOD

Air Distillation—Barometer 744 mm. First drop: 29°C. (84°F.)

Temperature °C	Per cent cut	Sum per cent	Specific Gravity of cut	°A.P.I. Cut	Viscosity at 100°F.	Cloud Test °F.	Temperature °F.
Up to 50	2.6	2.6	....	...	.....	.....	Up to 122
50- 75	2.0	4.6	0.663	81.9	.....	.....	122-167
75-100	5.7	10.3	.717	65.9	.....	.....	167-212
100-125	6.9	17.2	.740	59.7	.....	.....	212-257
125-150	5.6	22.8	.760	54.7	.....	.....	257-302
150-175	5.0	27.8	.777	50.6	.....	.....	302-347
175-200	4.5	32.3	.791	47.4	.....	.....	347-392
200-225	4.6	36.9	.804	44.5	.....	.....	392-437
225-250	5.5	42.4	.818	41.5	.....	.....	437-482
250-275	6.0	48.4	.832	38.6	.....	.....	482-527
Vacuum distillation at 40 mm.							
Up to 200	2.7	2.7	.853	34.4	41	5	Up to 392
200-225	5.6	8.2	.856	33.8	47	20	392-437
225-250	4.8	13.0	.871	31.0	61	40	437-482
250-275	4.3	17.3	.883	28.8	91	60	482-527
275-300	5.4	22.7	.894	26.8	165	80	527-572

Carbon residue of residuum 5.1 per cent. Carbon residue of crude 1.4 per cent.

APPROXIMATE SUMMARY

	Per Cent	Specific Gravity	°A.P.I.	Viscosity
Light gasoline	10.3	0.693	72.7	.....
Total gasoline and naphtha	32.3	.741	59.5	.....
Kerosene distillate	10.1	.812	42.8	.....
Gas oil	12.6	.844	36.2	.....
Nonviscous lubricating distillate	9.2	.859-.884	33.2-28.6	50-100
Medium lubricating distillate	6.9	.884-.900	28.6-25.7	100-200
Viscous lubricating distillate	...	...	...	Above 200
Residuum	28.2	.934	20.0	.....
Distillation loss	0.7	...	...	.....

SAMPLE NUMBER 26,566

Oklahoma, Seminole Field, Seminole County; base of Viola limestone, 4,171-4,256 feet. Specific gravity, 0.844; A.P.I. gravity 36.2; per cent sulphur, 0.47; per cent water, nil. Saybolt Universal viscosity at 70 degrees Fahrenheit, 48 seconds; pour point below 5 degrees Fahrenheit; Saybolt Universal viscosity at 100 degrees Fahrenheit, 45 seconds. Color, brownish black.

DISTILLATION, BUREAU OF MINES HEMPEL METHOD

Air Distillation—Barometer 747 mm. First drop: 43°C. (109°F.)

Temperature °C	Per cent cut	Sum per cent	Specific Gravity of cut	°A.P.I. Cut	Viscosity at 100°F.	Cloud Test °F.	Temperature °F.
Up to 50	...	...	...	...	.....	.....	Up to 122
50- 75	1.8	1.8	....	...	.....	.....	122-167
75-100	5.6	7.4	.713	67.0	.....	.....	167-212
100-125	7.7	15.1	.735	61.0	.....	.....	212-257
125-150	6.6	21.7	.755	55.9	.....	.....	257-302
150-175	6.5	28.2	.774	51.3	.....	.....	302-347
175-200	6.5	34.7	.793	46.9	.....	.....	347-392
200-225	5.7	40.4	.809	43.4	.....	.....	392-437
225-250	5.9	46.3	.825	40.0	.....	.....	437-482
250-275	6.1	52.4	.839	37.2	....	.....	482-527
Vacuum distillation at 40 mm.							
Up to 200	3.9	3.9	.867	31.7	42	28	Up to 392
200-225	4.8	8.7	.872	30.8	47	50	392-437
225-250	5.7	14.4	.887	28.0	60	65	437-482
250-275	4.0	18.4	.904	25.0	91	78	482-527
275-300	5.7	24.1	.921	22.1	168	92	527-572

Carbon residue of residuum 10.5 per cent. Carbon residue of crude 2.4 per cent.

APPROXIMATE SUMMARY

	Per Cent	Specific Gravity	°A.P.I.	Viscosity
Light gasoline	7.4	0.713	67.0	.....
Total gasoline and naphtha	34.7	.752	56.7	.....
Kerosene distillate	11.6	.817	41.7	.....
Gas oil	13.8	.856	33.8	.....
Nonviscous lubricating distillate	9.3	.876-.906	30.0-24.7	50-100
Medium lubricating distillate	6.2	.906-.928	24.7-21.0	100-200
Viscous lubricating distillate	0.9	.928-.931	21.0-20.5	Above 200
Residuum	23.2	.963	15.4	.....
Distillation loss	0.3	...	...	.....

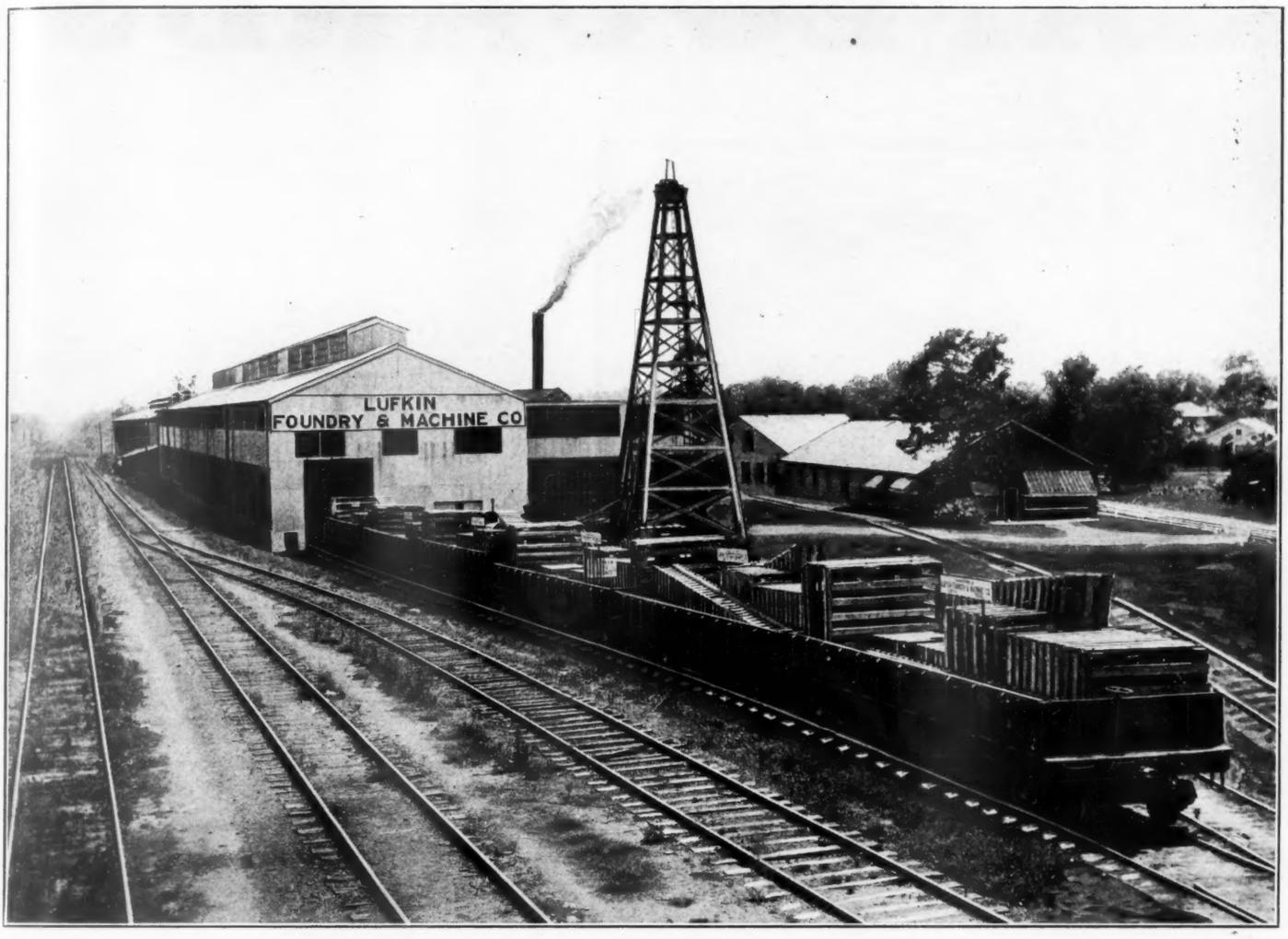
Reports of Investigation, Bureau of Mines, Department of Commerce.

SAMPLE NUMBER 27,377

Oklahoma, Searight Field, Seminole County, Carter Oil Co., G. W. Frasier Well No. 4, Section 3-9n-6e Indian, Wilcox sand 4,502-4,508 feet; specific gravity, 0.837; A.P.I. gravity, 37.6 degrees; per cent sulphur, 0.35; per cent water, nil; Saybolt Universal viscosity at 70 degrees Fahrenheit, 47 seconds; pour point below 5 degrees Fahrenheit; Saybolt Universal viscosity at 100 degrees Fahrenheit, 45 seconds. Color, green.

(Continued on Page 114)

BEYOND THE HORIZON-?



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Seminole Area Has Unique Record

Long Stretch of Territory in "Southwest Trend" Productive of Oil. Produced 100,000,000 bbls. in 14 Months

By J. L. Dwyer

The past 20 years have worked a marvelous transformation in the situation of Seminole County, Okla. and with the advent of oil, the interest has gradually turned from cotton and cattle, those markers of the famous old southwest of song and story, and by this time, the majority of the old-timers found in the towns of the county have familiarized themselves with the various implements used in the drilling and producing of oil. The landowners who a decade ago had not the slightest interest in the price of gasoline nor the production of petroleum, now are intent upon examining their lands for signs of east dip, and any other characteristics portending favorable evidence of petroleum accumulation.

The land where the poor Seminole Indian formerly hobbled his pony and built the small grass fires peculiar to the Redman, is now dotted for many miles with the latticework of the oil derrick, and instead of the poor Seminoles huddling closely over the grass fires, the familiar sight upon the prairie is a party of geologists who are making a preliminary examination of the territory.

The only unchanged condition in this prolific area is that the poor Seminole Indians have for the most part remained poor.

The Southwest Trend

The oil fields of east central Oklahoma have for 15 years been gradually extending their borders to the southwest in an unmistakable trend. This trend as pointed out in former stories of oil production in this region had its inception when the Kiefer Field touched its period of flush production in 1911. Slowly but steadily the drill uncovered new fields in this direction and a bevy of cities have prospered as a result. Kiefer, Mounds, Beggs, Henryetta, Okemah, Holdenville, and Wewoka have experienced the prosperity of the fields which finds a reflection in the bank accounts of the local merchants. Okmulgee, in Okmulgee County was, and to a certain extent still is, a sort of headquarters for many who are heavily interested in this general area as far as oil prospects and royalty interests are concerned, and in addition to the towns named, there have been dozens of mushroom towns which have sprung overnight out of the dust, and as suddenly vanished when the drilling activity ceased.

From Kiefer to Seminole is a long stretch in petroleum history, but the newer field is without question the greatest group of pools which the region has ever witnessed. There are just 17 pools which have passed an aggregate production of over 100,000,000 bbls., and the majority of them have required 10 years to accomplish this achievement, but the Seminole Field which has been producing from the Wilcox sand for 14 months, has during the past 30 days passed the 100,000,000-bbl. mark, a feature which it is thought will leave a mark for several years.

There are those among the students of petroleum production who will remark that the output of the five pools of Seminole should not be grouped together in one general field, and who claim that by thus doing, the performance of many notable fields will be dimmed. The Los Angeles basin is one particular spot which would probably have outshone the performance of the Greater Seminole area had all things been considered from a point of area alone; but it must be remembered that in some parts of the Los Angeles basin, townsite drilling was the order of advancement, while in the Seminole region, there were no instances of drilling one well on less than 10 acres.

By acclaiming the feats of Seminole, it is not the intention to dim the wonderful feats of production which have marked other operations, but rather to pay the proper homage to the field which has justly earned the right to the title of "The World's Greatest Light Oil Field."

Geology Played Big Part

There are so many angles to touch in pointing out the various lines in which Seminole differed from other fields of the Mid-Continent that it becomes a difficult task to start. The Seminole Field is one operation where the companies playing geology have participated with extraordinary results, and in sharing its profits, the companies and individuals who are normally opposed to the workings of geology have participated in a very limited measure. The fields, speaking broadly, is a huge tribute to the efficacy of the geological profession, and should for many years stand as a monument to the efforts of that group of scientists who have done so much in uncovering the petroleum deposits of the nation.

From a geological standpoint, the Seminole pools offer an unlimited opportunity for study, and the next year should observe many valuable contributions to the contemporary geological literature about Seminole.

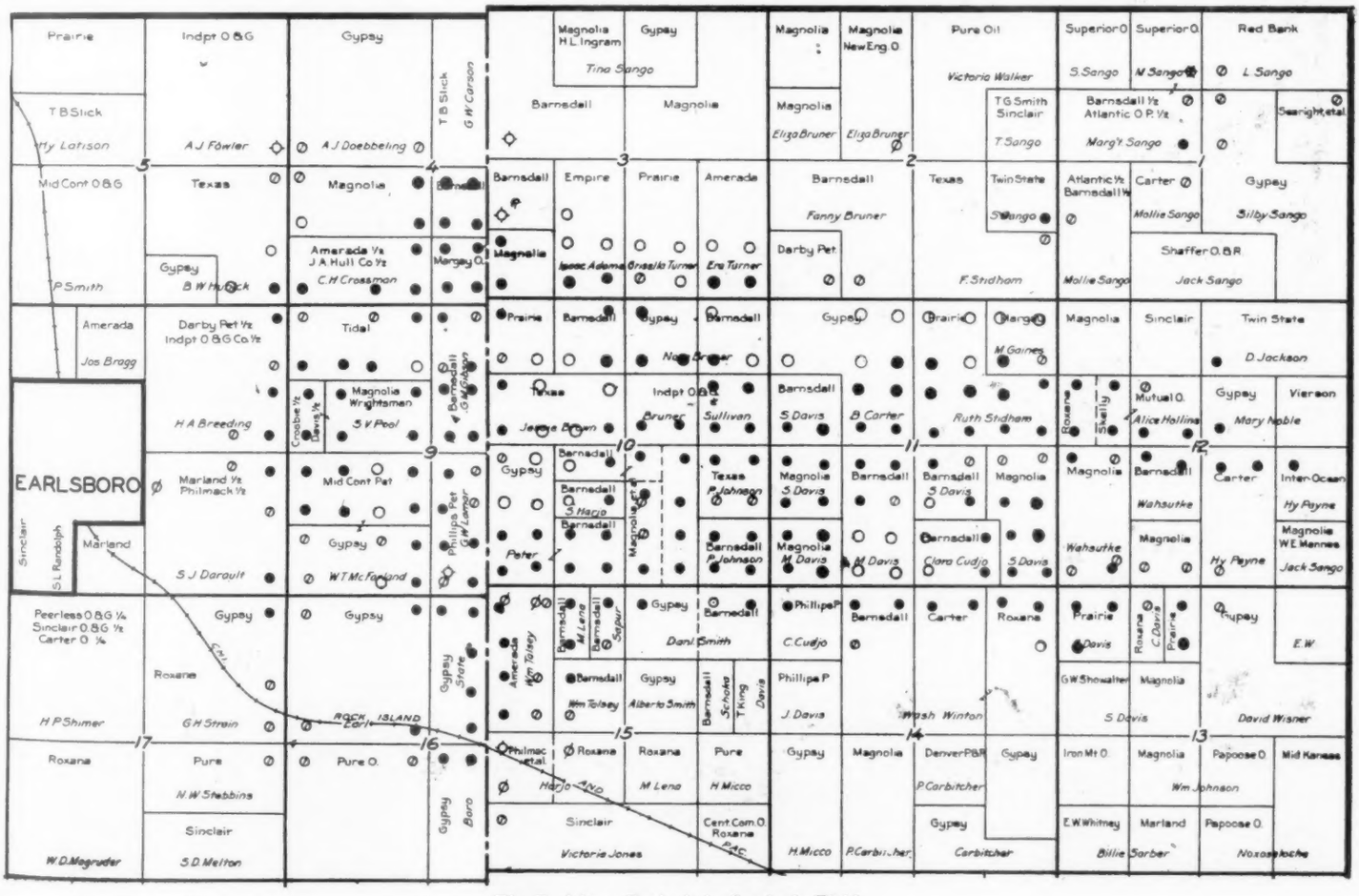
Probably the next important thing to consider in the Seminole Field is the application of the air lift which has been responsible in a large measure for the performance of the field, and the manner in which it attained the huge production in such a comparatively short time. The air lift has proved to be the stimulus which hastened the peak of the Seminole Field, and which placed the peak far beyond the peak of any other light oil field known to history.

The matter of supplies was a vital factor in drilling and equipping the Seminole Field, for the 4,000-foot depth of the Wilcox sand made the drilling and equipment cost a tremendous item, and the supply companies present the one branch of the industry which will profit upon all operations in this area regardless of whether the production of the wells is large or small.

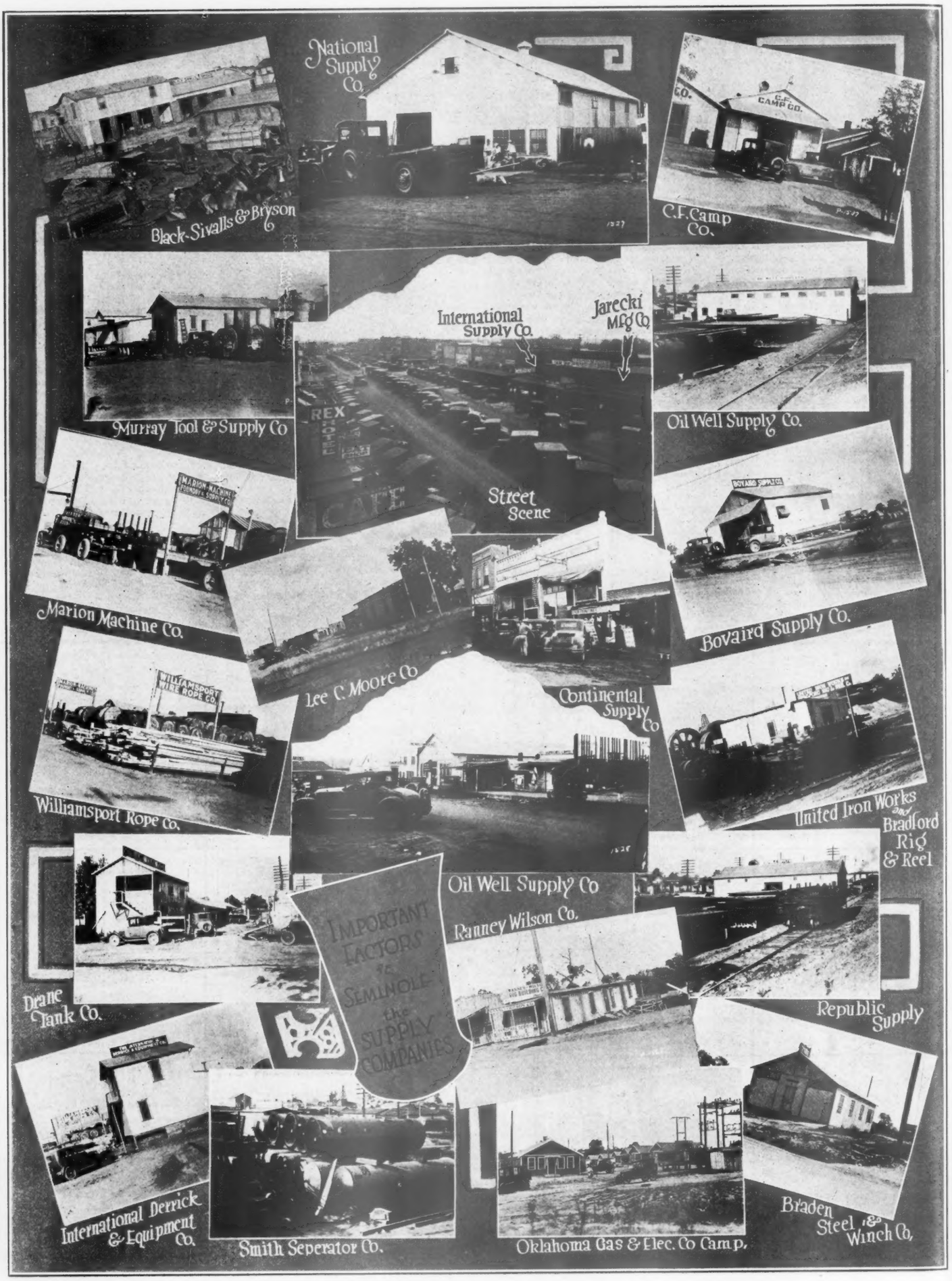
Drilling Problems

The matter of drilling this great field was another task which for a time caused much trouble, and it has been remarked that the contractors made very little money in this field. At one time it was thought that the supply companies would ultimately take back more drilling

(Continued on Page 93)



The Earlsboro Pool of the Seminole Field.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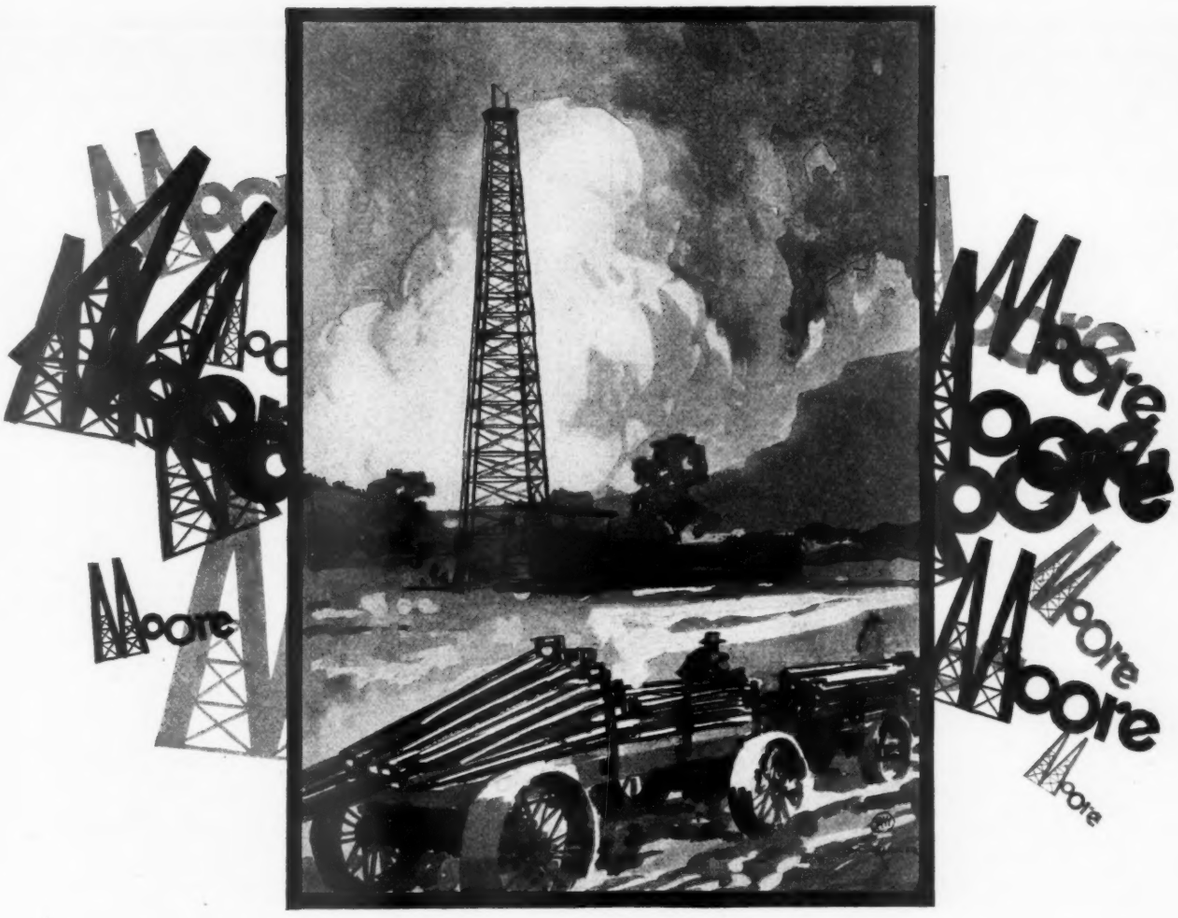

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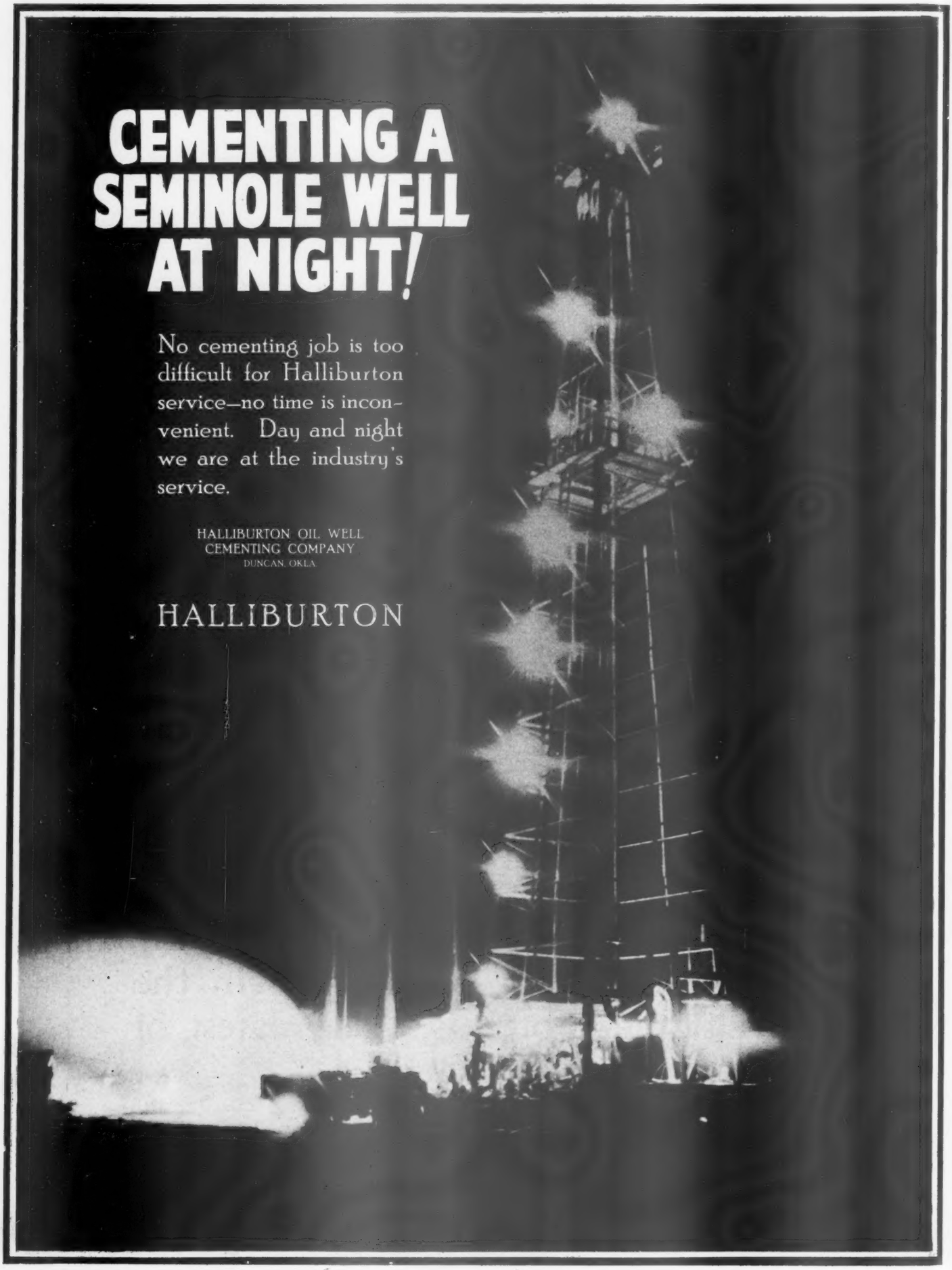

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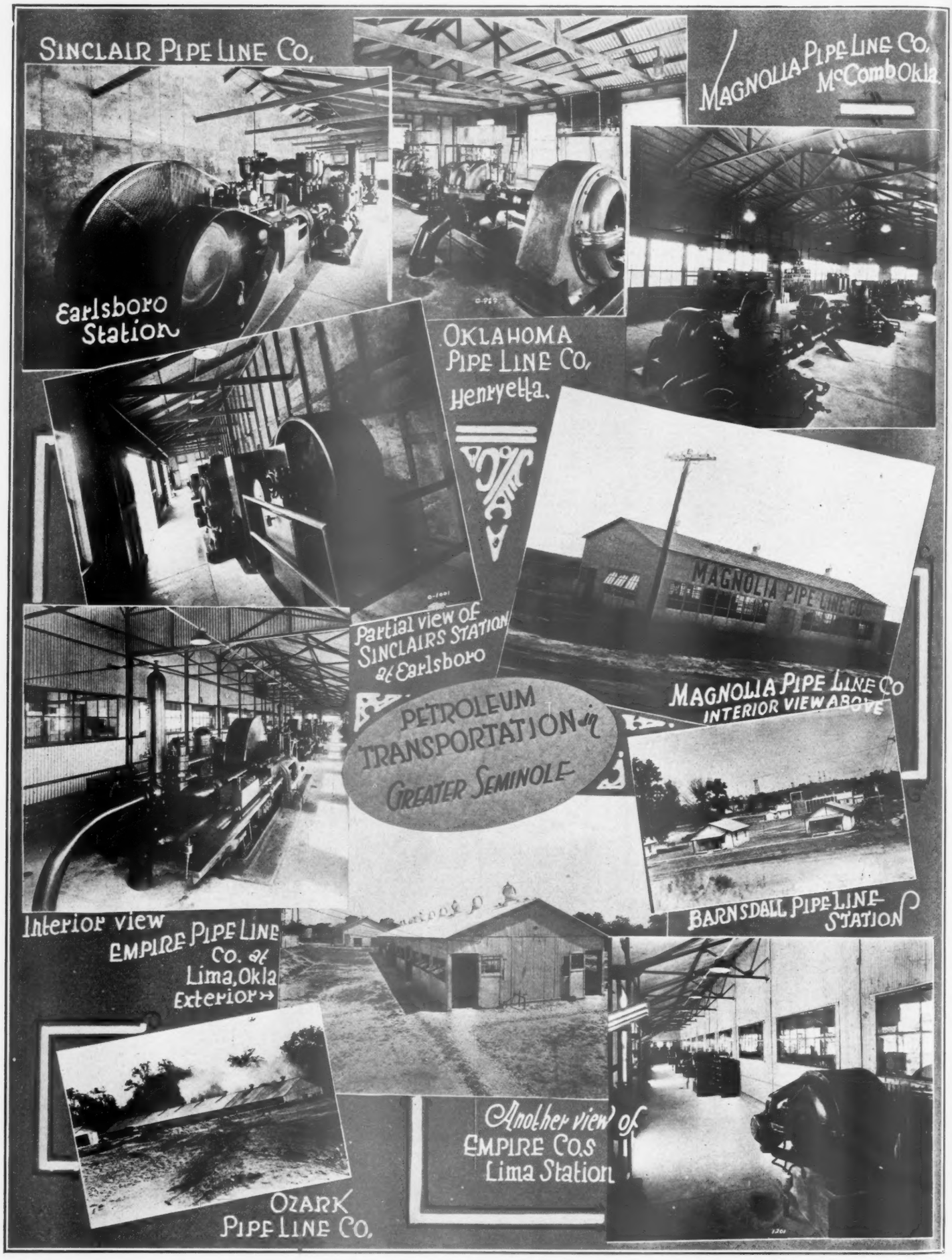
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OKLAHOMA PIPE LINE CO. Henryetta.
Partial view of SINCLAIRS STATION at Earlsboro
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Another view of EMPIRE CO.S Lima Station
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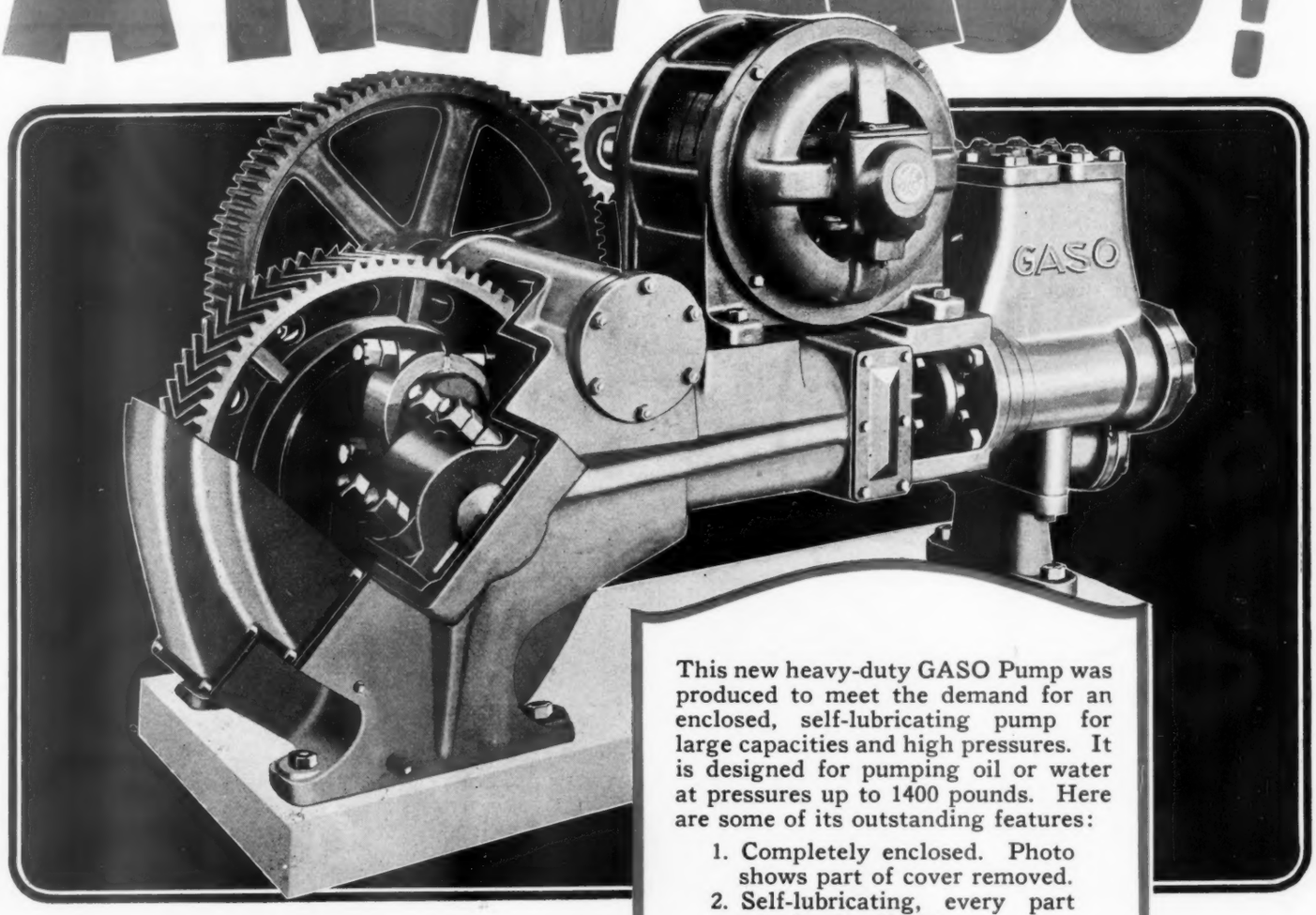

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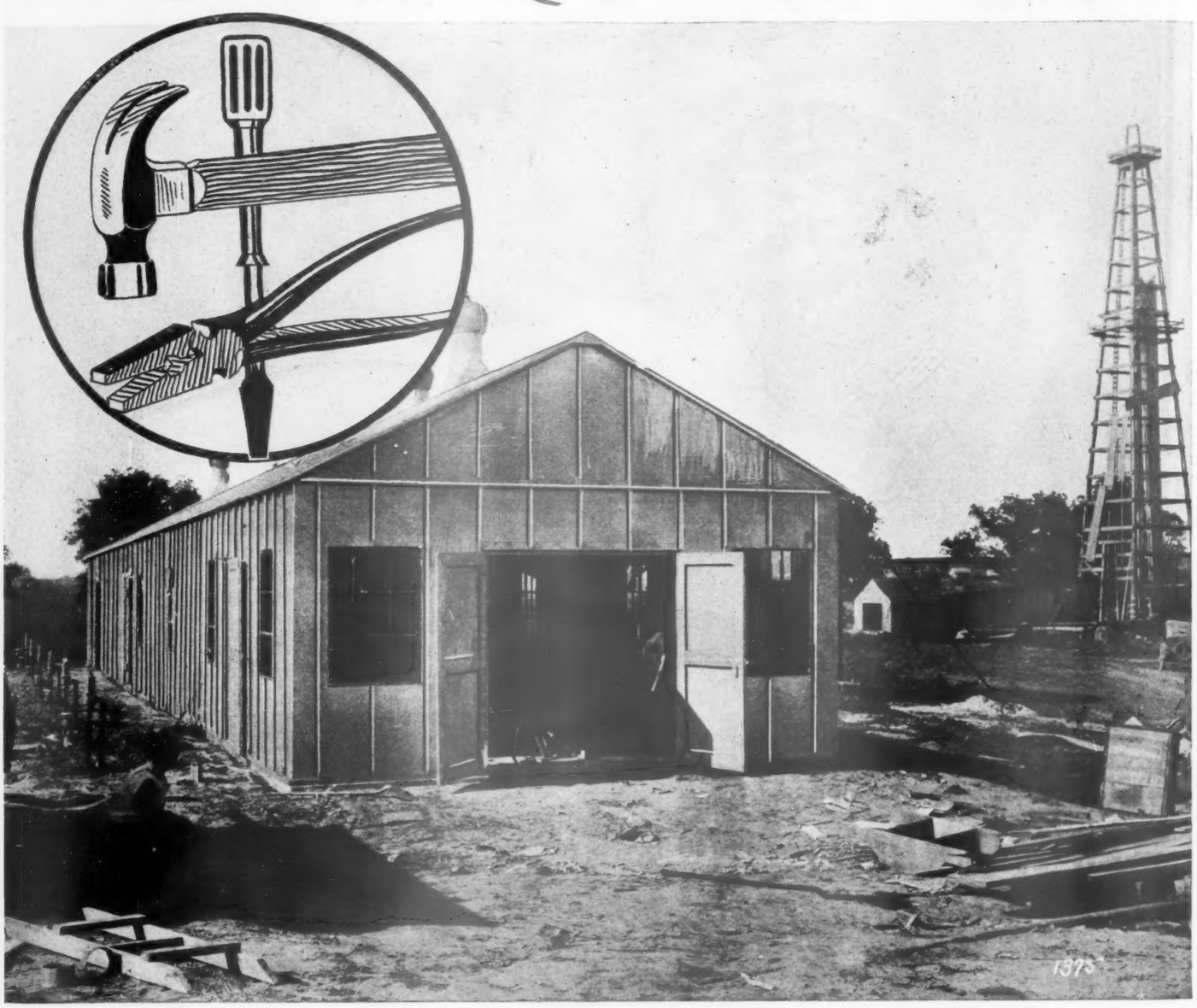

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Marion Machine, Foundry & Supply Co., Marion, Indiana

SEMINOLE AREA HAS MOST UNIQUE RECORD

(Continued from Page 85)

tools on account of drilling contractor's going broke in this field than in any field in the history of the nation. The original price for drilling contracts in the field was $6 per foot for the rotary hole which was carried down to 3,800 feet, and $5.50 for the cable tool hole which was made the balance of the operation. When it was apparent that the drilling contractors could make no money at these prices, gradual increases were granted by the operating companies, who realized that in a field where drainage was a grave problem, drilling time was of paramount importance, and in order to protect their interests, the speedy completion of the wells was necessary. This fact assisted in the increased drilling prices which the contractors realized, and in the latter days of the field operations, the price per foot was increased to $8 for the rotary hole, and $6.50 for the cable tool hole.

Drilling the sand in the Seminole area was a vexing problem, and unlike many other Wilcox sand operations, when the sand was touched at Seminole, the trouble instead of being over was just begun. There were dozens of instances where companies scratched the sand, and the well began flowing, adding trouble to the fishing jobs which were encountered in the top of the Wilcox formation. Various combinations of drilling strings were tried out in this work, the jars were changed from above to below, and sinkers and other items were used in attempts to discover the most favorable method of getting past the first 10 feet of sand which was very treacherous, but still the fishing jobs were found. There seemed to be something in the first 10 feet of Wilcox sand in the pool which broke many pins on the tops of the bits, and which clung tightly to the bits when they were detached from the stem.

Water supply for the rotary drilling outfits presented another item at Seminole where practices were slightly changed. There was a stratum which contained fresh water found at a depth of 80 feet, and the rotaries and air lift plants were supplied with their water requirements by the drilling and equipping of shallow wells which were pumped by 20-foot derricks and light powers such as were used in former lines to pump shallow oil production. Each lease in the Seminole Field is dotted with these miniature derricks, and the small band wheel powers, for the rotaries use plenty of water in their grindings, and the air lift plants needed water to cool the cylinder jackets of the engines and compressors.

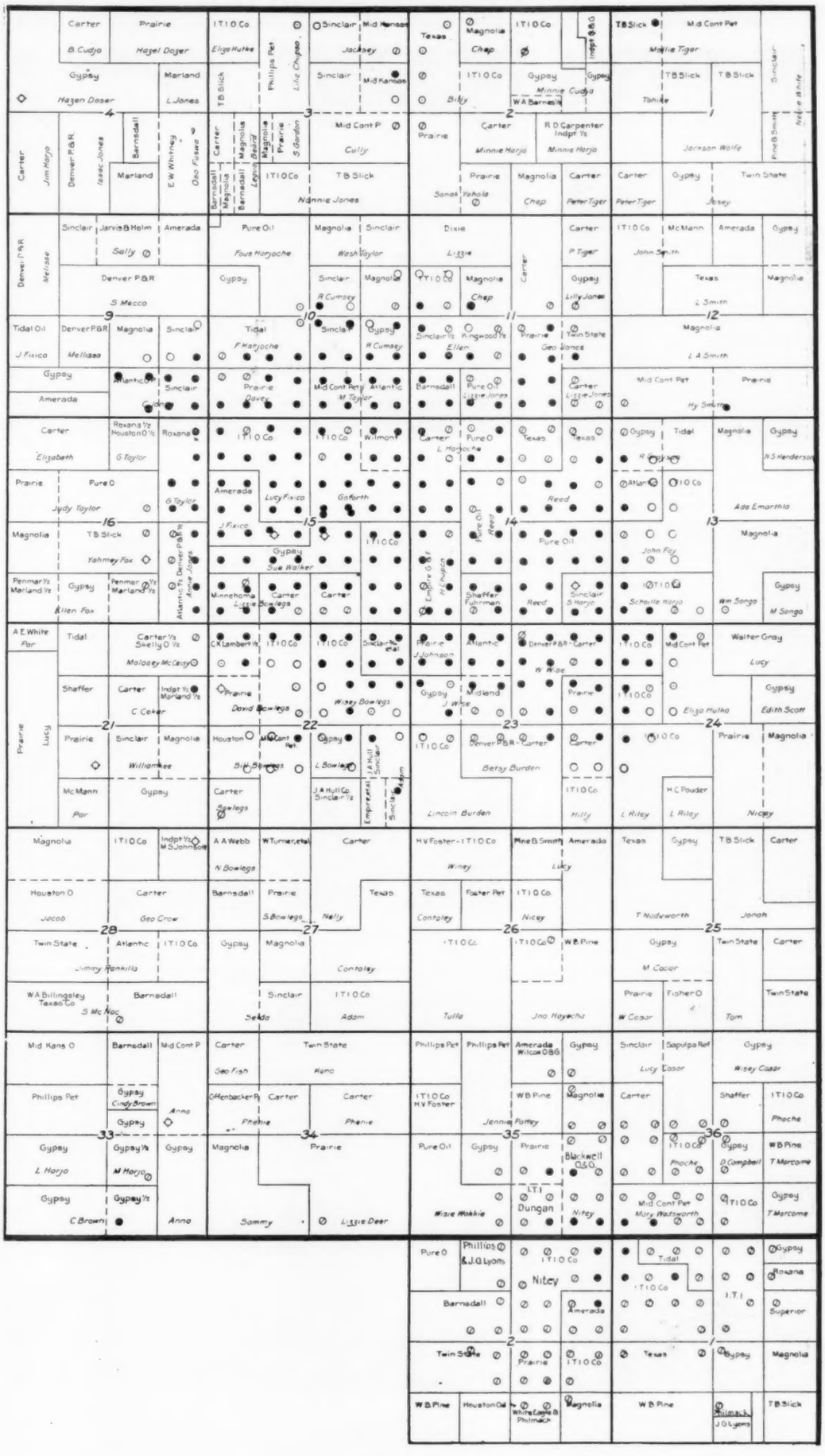
Big Output Per Acre

There are approximately 300 producing leases in the four pools of Seminole, Searight, Seminole City, Bowlegs and Earlsboro, and out of the 300, 34 have to date produced over 1,000,000 bbls. of oil each. This figure of output might well lend a thought to future considerations of bonus prices which may be paid for leases and royalties, and in the case of some of the 34 leases, their best days of production are behind them, and in the future little may be expected.

In considering the yield per acre which the leases have made to date, it will be recognized that in many cases, the leases which opened new areas and new parts of pools, have established the best records, and while a certain part of this is due to having the start upon adjoining leases, some recognition must be given to the effects of drainage which have been rather unusual in this field.

The exceptionally soft texture of the Wilcox sand in the whole Seminole territory is responsible for the drainage problems, and this has caused a new scope of operations. In former fields when a new well was completed, the companies or individuals owning acreage around the new find were slow to start their drilling campaign. The wells offsetting the new finds were, of course, started immediately, and possibly drilling was conducted in an area covering a quarter of a mile in all directions from the discovery well, providing that no dry

(Continued on Page 105)



The Bowlegs and Little River Pools of Seminole.

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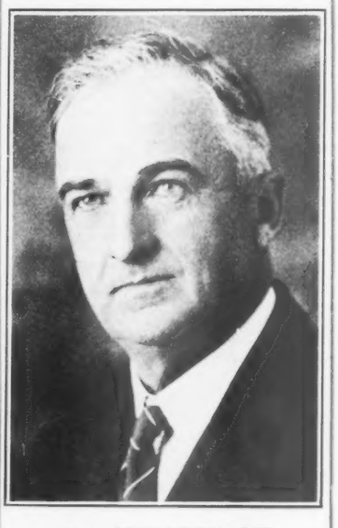

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C. P. DIMIT
General Superintendent, Gypsy Oil Co.

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"NEW ACME ROTARY RIG BEATS THEM ALL"

ACME TWIN DRILLING ENGINE

Says Driller Kirk, SEMINOLE

This Continental Oil Company well in the Seminole district is Acme-equipped throughout—Titusville Acme Boilers, Twin Drilling Engine, Slush Pumps, Drawworks, Rotary.

R. D. Kirk (right, middle photo), driller for Lippa & LeBosquet, Inc., Contractors, says he has worked on all makes of rotary outfits, and "the new Acme rig beats them all."

"If CONTINENTAL *Sells It, There Is No Better"*

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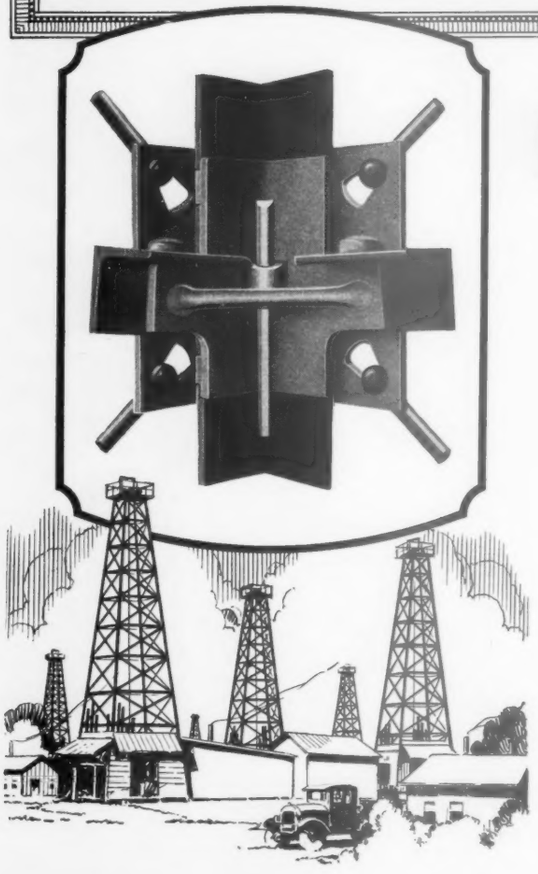

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Ideal for AIR LIFT Stations

Many of the leading operators in the Seminole Field are using BRADEN Buildings to house their air and gas lift installations. Among our Seminole customers are such leading companies as Barnsdall, Independent, Indian Territory, Prairie, Shaffer, Skelly.

BRADEN Sectional Steel Buildings are built especially to meet oil country requirements, and are enjoying an ever increasing demand for all oil field purposes. We carry belt, engine, and tool houses, and other small buildings in stock.

Our BRADEN Clamp-Joint Derrick is attracting wide attention. The patented joint eliminates bolts, tremendously speeding up erection and dismantling and promoting safety, tension, and flexibility. Ask for literature.

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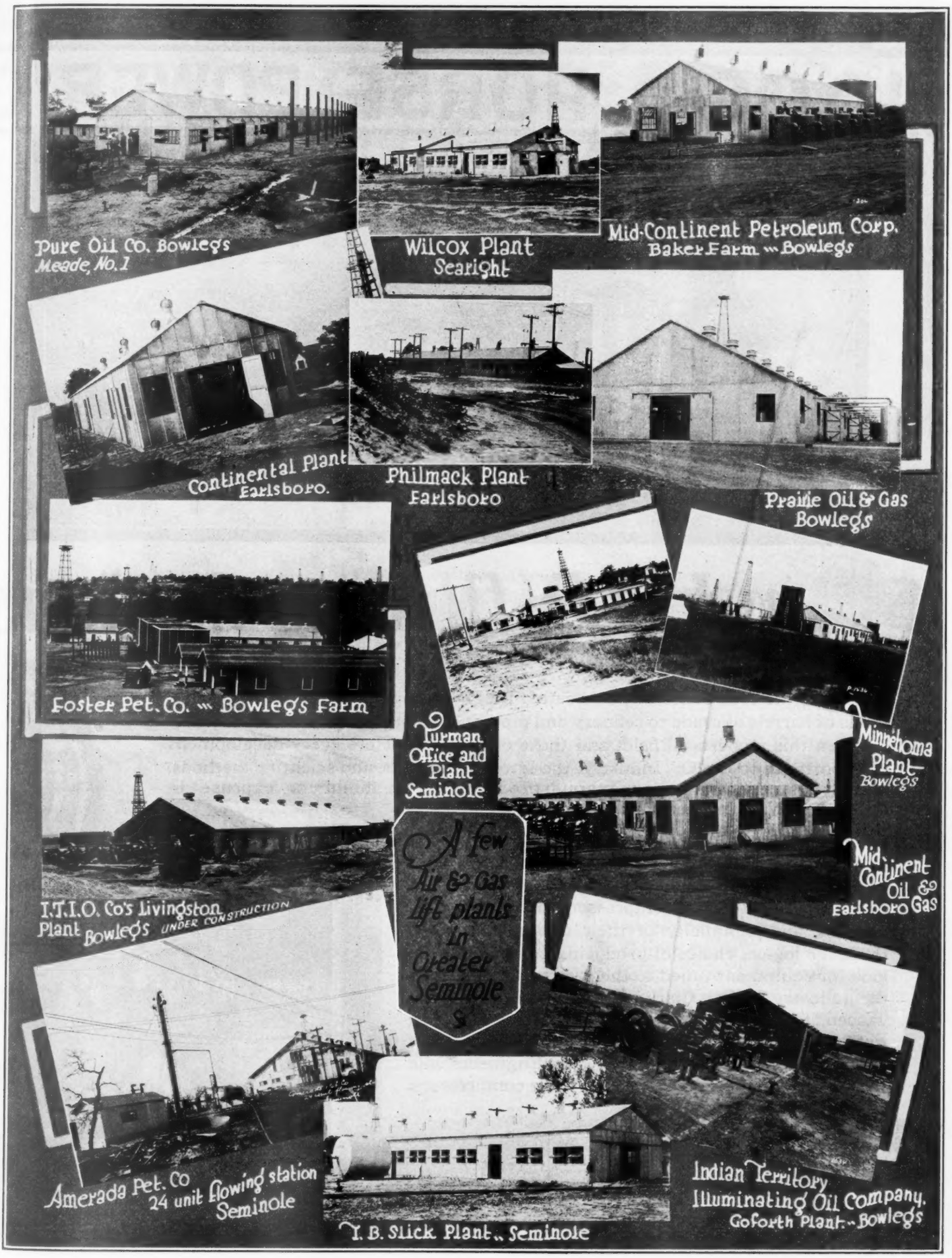
Pure Oil Co. Bowlegs
Meade, No. 1
Wilcox Plant
Searight
Mid-Continent Petroleum Corp.
Baker Farm — Bowlegs
Continental Plant
Earlsboro.
Philmack Plant
Earlsboro
Praine Oil & Gas
Bowlegs
Foster Pet. Co. — Bowlegs Farm
Turman
Office and
Plant
Seminole
Minnehoma
Plant
Bowlegs
A few
Air & Gas
lift plants
in
Greater
Seminole
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Oil &
Earlsboro Gas
I.T.I.O. Co's Livingston
Plant Bowlegs UNDER CONSTRUCTION
Amerada Pet. Co
24 unit flowing station
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Goforth Plant — Bowlegs

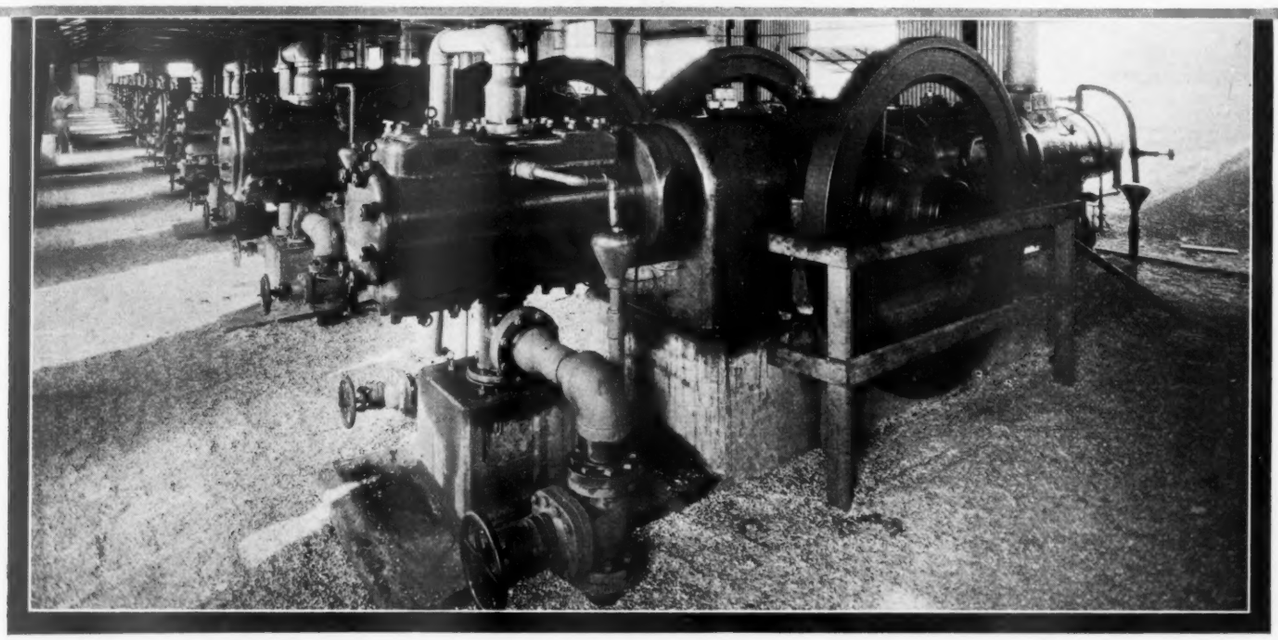
10,000 HORSE POWER OF

in I.T.I.O. flowing Stations--i

Seminole, the lode-stone of petroleum! Daily supplying hundreds of thousands of barrels of crude to refinery and pipe line. What a remarkable contrast between this modern oil field, and those of the past. Here every development of importance to the Oil Industry, the latest equipment, and scientific methods, make it possible to maintain maximum production with minimum expense in handling. With greater convenience, and in less time.

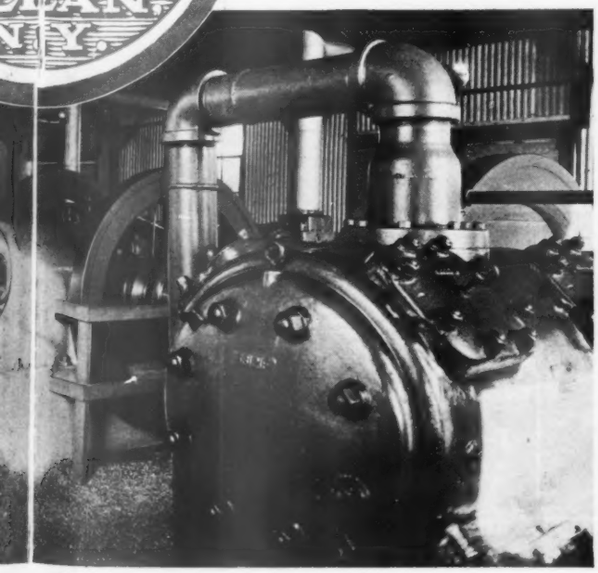
Clark Compressors, installed for air-and-gas-lift flowing wells, represent one phase of this new era which has opened up greater possibilities for the oil operator. The economy and dependability of Clark Compressors, due to the ruggedness and simplicity of their design, has made them the logical choice of producing companies who look for equipment tuned to the present day needs of the industry. That Clark Compressors have advanced, to keep step with the progress made in Petroleum Engineering, is a fact that has been favorably commented upon many times by Engineers who thus explained their preference for these compressors.

OF CLARK COMPRESSORS



s--in the Seminole District—

Yet in the final analysis, it is the plant operator who influences the producer's choice in the matter of compressor equipment. And from these men, the actual operators who "live" with their compressors, Clark Compressors receive their highest praise. Many operators who have used Clark equipment, would much rather operate a Clark than any other compressor; some will have no other. In stating their reasons why they say: "The Clark Compressor has the greatest overload capacity. It has no valves to grind—practically 100% operating efficiency is nothing unusual. Simple to operate. Centralized operating control—operator is in no danger from moving parts. And because it is readily accessible." Write for full detailed information to Clark Bros. Company, Olean, N. Y. Mid-Continent branch and warehouse at 125 W. First St., Tulsa, Okla. Other warehouses at McCamey and Sweetwater, Texas, and Artesia, N. M. Also Smith, Booth, Usher Company, 228 S. Central Ave., Los Angeles and 50 Fremont St., San Francisco.



PURE CO'S. MEADE PLANT NO. 1.
at Bowlegs
Largest Air Lift Plant in the World
a page of interiors
of AIR & GAS LIFT
PLANTS
in GREATER SEMINOLE
I.T.I.O. Co.
Goforth Lease
Bowlegs
I.T.I.O. Co. Goforth
Plant under construction
Mid-Continent
Petroleum, Earlsboro
I.T.I.O.
Livingston
Plant Bowlegs
UNDER CONST.
Continental Oil Co.
Spencer Lease
Earlsboro
Shaffer O. & Ref. Co. Bowlegs
CARTER'S
Grisso Plant
Seminole
Mid-Continent
Pet. Corp.
Searight.
I.T.I.O. Co.
Davis Farm - Bowlegs
Gypsy's - Peters Plant No. 1
Earlsboro
and
another view of same plant
Control room
Yurman Oil Co. Plant, Seminole

Greetings!

IN extending our welcome and congratulations to the Fourth International Petroleum Exposition and its guests at Tulsa September 24th to October 1st, we take this opportunity of extending a cordial invitation to make our offices your headquarters while in Tulsa.

You are urged to inspect the properties and facilities of our refinery at Cushing where DEEP-ROCK products are produced—where modern methods incident to a complete producing, refining and distributing cycle are in daily practice.

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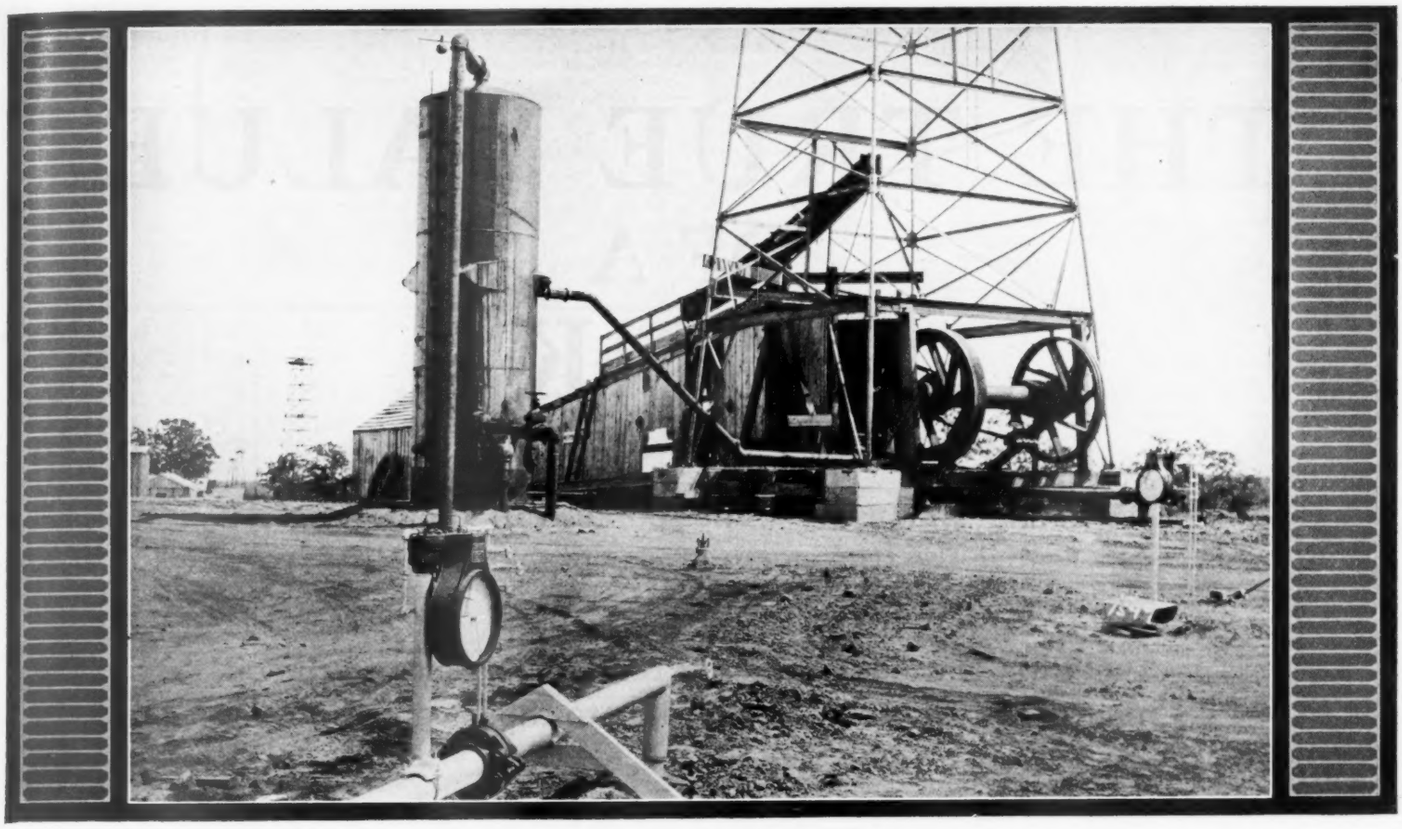

400 —METRIC— *Orifice Meters*

in use for air and gas lift at SEMINOLE

No testimonial for the accuracy and dependability of Metric orifice Meters could be so impressive as the fact that over 400 of these meters are being used in the Seminole district for air and gas lift operations. One of the largest producing companies in this field alone uses 154 Metrics.

A typical hook-up at the well is shown above, and illustrates how most users install Metrics for practical application. One meter is recording the gas flowing to the well for pressure on the sand, and another is recording the volume of gas coming out. Our engineers will gladly assist with your gas lift problems. Literature upon request.

WESTCOTT & GREIS, *Inc.*

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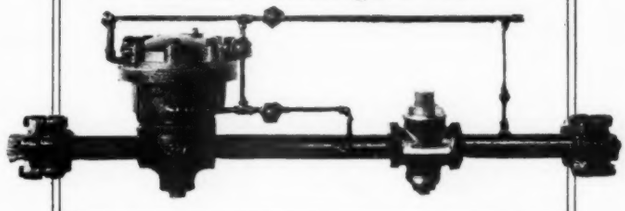
NEW! ·METRIC· VOLUME RATE CONTROLLER *for air and gas lift —*



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THE TRUE VALUE OF A BANK

OIL men who analyze the sources of their progress realize the true worth of acceptable banking connections.

The First National Bank has rendered service to the oil men since 1895. It has been alive to the progress of the oil industry from its infancy.

Many of its directors are of the Mid-Continent's most successful oil men.

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THE
FIRST NATIONAL BANK
"TULSA'S OLDEST BANK"
CAPITAL $2,000,000 (Established 1895) SURPLUS $500,000
AND
FIRST TRUST & SAVINGS BANK
(Established 1927) CAPITAL $1,000,000

SEMINOLE AREA HAS MOST UNIQUE RECORD

(Continued from Page 93)

holes or any other unfavorable circumstances prevented. In the Seminole Field the soft texture of the Wilcox sand and its consequent drainage effect caused wells to be started in an area of over half a mile in all directions from the discovery well. In some cases such as the of the Bowlegs pool, there were 102 active operations started as a result of the completion of one single well. The Indian Territory Illuminating Oil Co.'s No. 1 H. E. House, in the northeast corner of Section 1-7-6, which had an initial flow of 10,000 bbls. per day was solely responsible for this unusual activity, with the possible exception of one lease which had only a limited time to run before expiration.

Unit Plan Possibilities

The Greater Seminole area might be cited as a strong argument for the unit plan of operation, for had it not been Little River operations 6 miles south held and operated in small tracts of 40 and 80 acres with an occasional 160-acre tract, the peak production could easily have been delayed until more favorable conditions of crude prices were in existence. There were some short term leases in each of the Seminole pools, but it is thought that if the entire land covering the productive area had been held by a group of interests acting collectively, there would never have been any trouble of congestion or price reductions, as the wells could have been held in check and completed at will.

The Seminole Field is the second field in the Mid-Continent territory to have experienced the services of an umpire, appointed to help restrict production and regulate pipe line runs. The Cushing Field of Creek County was the first and in 1914 was placed under the jurisdiction of an umpire. In the spring of 1927, Ray M. Collins of Tulsa, was named official umpire in charge of the Seminole oil production, and at a later time he was named as an agent of the Oklahoma Corporation Commission. Under the plan of operation devised by the oil producing companies, Mr. Collins was placed in direct charge of prorating the oil produced in the field, and the total output of all pools of the field was limited to a daily figure of 450,000 bbls. The wildcat wells drilling in the outlying territory were to be limited to a daily production of 100 bbls. should they find the Wilcox sand productive. There was no restraint placed upon the drilling activity in any of the pools, and the only check was placed upon the production. Mr. Collins had four assistants who were connected with oil companies, and who were temporarily loaned to him for the purpose of checking the possibilities of each lease, and regulating the output of each lease. The plan was successful, and normal decline soon placed the output of the field under the prescribed figure of 450,000 bbls.

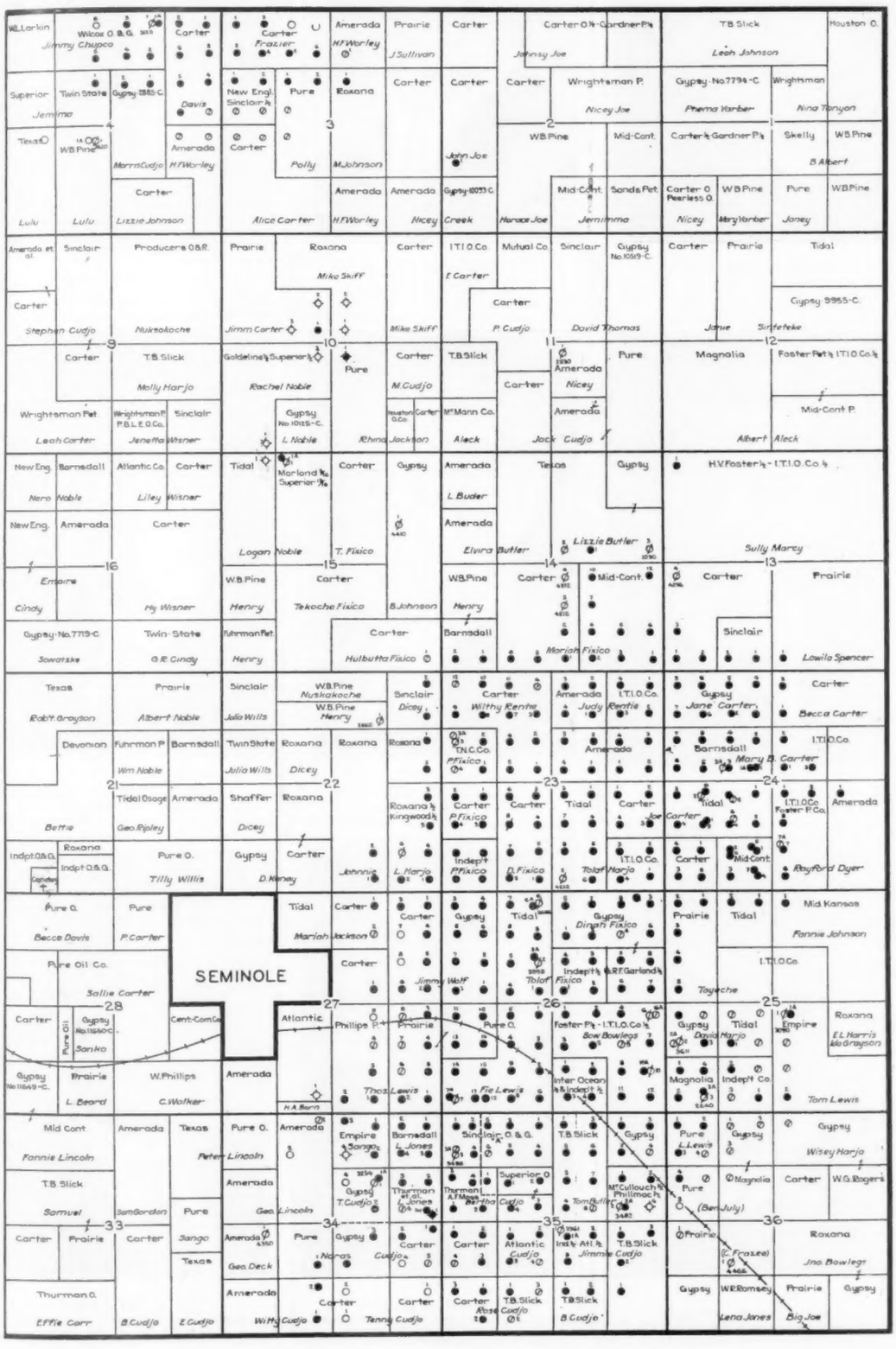
It is now definitely thought that four of the pools have passed their period of greatest production, and Bowlegs, Earlsboro, Seminole City and Searight are believed to be on the decline. The Little River pool centering around Section 1-7-6, and Sections 35 and 36-8-6 presents the problem for the future of this area. The irregularities of this pool to date have caused it to resemble the Earlsboro pool. There have been a succession of highs and lows found at Little River similar to the underground condition found in Earlsboro, and while the Little River Pool in the opinion of many will not cover the area taken in by Earlsboro, the nature of it to date is more like the latter pool than any of the other Seminole operations.

Now that some thought has been given to the south limits of the Wilcox sand in Oklahoma, and these limits have been placed in Township 7n, other regions must be looked to for the Wilcox sand oil of the future. It will probably be a long time before another pool of the size, peak or area of the Seminole Field will be discovered.

The Seminole Field has caused many revisions of equipment ideas and practices. There can be no definite formulas stated for the general use in the field, as varying applications have been used to meet individual conditions of drilling and also of production. The different fields have been drilled in different manners. In the Seminole City and Searight Pools, which were the first pools to be operated, the rotary hole was carried down to 3,800 feet, and from that point the cable tools were used. As the cable tool drilling was necessarily much slower than the rotary operations, this work required about 20 to 30 days from the time the rotary casing was set until the Wilcox sand was touched. As mentioned before in this story, there were numerous troubles encountered between the bottom of the rotary holes and the sand, and when in the Little River Field it was found possible to carry the rotary hole down to a lower depth, this method of operation was generally used.

The older fields setting the rotary casing at 3,800 feet encountered the Hunton lime, the Sylvan shale and the Viola lime and sometimes the Chattanooga shale. These formations often gave much trouble owing to the presence of oil and gas, and by carrying the rotary casing through them, at least 10 days' drilling time was saved.

The matter of lease storage tanks gave the completion of new wells much trouble in the earlier days of the field. Particularly last winter when road conditions into the field were unusually unfavorable, there was a mad scramble to erect sufficient tanks of all sizes to take care of the oil. The preferable size used for leases was 1,000 and 1,500-bbl. tanks, but when roads were bad, and several wells were closer to the sand on the leases, any size tanks were used.



Seminole City Pool, the first Wilcox Sand operation of the area.

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President, Indian Territory Illuminating Oil Co.

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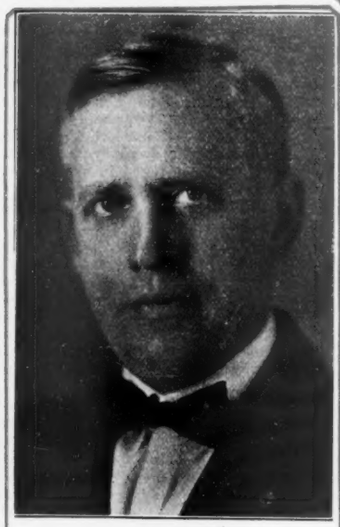

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We Heartily Welcome

Visitors to the International Petroleum Exposition and hope your stay in Tulsa will be pleasant and that you may return frequently.

We trust you may find it convenient to call at our Bank, thus affording us the opportunity of forming your acquaintance.

Throughout the more than twenty years of its existence, this Bank has continuously co-operated with the Oil Fraternity in the development of the Mid-Continent field.

Among our officers and directors are men with practical experience in every phase of the oil business and they will be glad to discuss his problems with any oil man. We have assisted in developing a great number of oil properties and place at the disposal of the oil men the benefit of our experience and accumulated knowledge.

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FROM LIEF ERIC TO LINDBERGH

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Steel Structures Are Spacious

From the time when Lief Eric—called Lief the Lucky—touched the shores of America - - - to the day that Lindbergh—called Lucky Lindy—hopped over practically the same course - - - the progress of the world has been steady. Constant change and improvement—constant striving for perfection - - - that constitutes progress.

Steel buildings are best in the oil fields—they endure, they eliminate the fire hazard—they are practical in every respect. 95% of salvage can be realized in dismantling steel structures - - - repairs are negligible - - - they represent the highest degree of building economy.

And there is PROGRESS in the construction of steel buildings. We never finish a job that in some way does not exceed the highest effort put forth on the preceding job. There is an improvement—an advance—an increased value in every new structure - - - PROGRESS is there.

We have a number of outstanding steel buildings in the Seminole field. These buildings are rendering service to their owners—reflecting credit on their builders. May we consult you on your building needs? We will be glad to describe our steel structures, quote prices, or serve you in any way that we can.

THE INDUSTRIAL CONSTRUCTION CO.

Tulsa, Oklahoma

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Earlsboro
UNDER CONSTRUCTION
UNDER CONST. Magnolia's Plant
Earlsboro
Magnolia Petroleum Co-Earlsboro
Holmsley Plant.
Roxana's Plant No19
Bowlegs
Carter Oil Co. -- Seminole
Grisso Plant
Barnsdall Oil Co.
Earlsboro Plant
Carter-Stewart Plant
Searight
Forrest E. Gilmore-No18, Bowlegs
Empire's
Plant
Bowlegs.
Manufacturing
Natural
Gasoline
in
Greater
Seminole
Sinclair Plant No.12
Seminole
Plant of Independent
Oil & Gas Co, Seminole
Pure Oil Co. Seminole
Strothers Plant
Gypsy Oil Co.
Earlsboro
Amerada Plant -- Seminole
Sinclair Plant
Seminole No.12

Varied views of Natural Gasoline Manufacturing in Greater Seminole
CARTER OIL COMPANY STEWART PLANT Searight
SINCLAIR PLANT No 12 Seminole.
Auxiliary Unit
GILMORE PLANT No 8 Seminole
GYPSY PLANT Earlsboro
EXTERIOR SINCLAIR PLANT No 12 Seminole
VICTOR CO'S. PLANT Earlsboro.
PURE OIL CO'S. STROTHERS PLANT, Seminole.
ROXANA PLANT Bowlegs
CARTER PORTABLE PLANT Cudjo Lease, Seminole
BARNSDALL PLANT Earlsboro
CARTER GRISSO PLANT Near Seminole

If You Would be Satisfied With Your Threads——Use LANDIS

The Pittsburgh Pipe and Supply Company whose 6″ Landis Pipe Threading and Cutting Machine at Seminole, Oklahoma, is shown here is completely satisfied with the threads it produces.

They must however, satisfy their customers and that is a bigger job. Therefore, they use Landis. And their customers are satisfied. They know that the threads they buy are well formed, of correct taper and of the proper length—these features necessary for tight joints.

The Landis Machine insures tight joints because the distinctive Landis Chaser just naturally cuts good threads. When dull the chaser is ground on the cutting edge and *not* in the throat. Each grinding gives the effect of a brand new chaser. The contour is the same, and full tapered, full length threads are produced the same as with a new chaser. No other threading tool is like this.

The Landis Machine also cuts threads at a profit. This is due to the speed and centralized control of the machine. Also the long life of the Landis Chaser and the wide range covered by one set means low, very low costs.

More Landis-Cut threads are produced in the Oil Fields than any other.

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Waynesboro, Pennsylvania

Detroit Office: 5928 Second Blvd.

DOMESTIC AGENTS: Marshall & Huschart Machinery Co., Chicago, Ill.; Marshall & Huschart Machinery Co. of Indiana, Indianapolis, Ind.; Colcord-Wright Machinery & Supply Co., St. Louis, Mo.; R. B. Whitacre & Co., St. Paul, Minn.; Hamilton Machinery Co., Chattanooga, Tenn.; Young & Vann Supply Co., Birmingham, Ala.; Woodward, Wight & Co., New Orleans, La.; Shreveport, La.; Tampa, Fla.; Jos. T. Ryerson & Son, Houston, Texas; Hendrie & Bolthoff Mfg. & Supply Co., Denver, Colo.; Salt Lake Hardware Co., Salt Lake City, Utah; Harry M. Euler Co., Portland, Ore.; Hallidie Machy Co., Seattle, Wash.; Hallidie Co., Spokane, Wash.; Herberts Machinery & Supply Co., San Francisco and Los Angeles, Calif.; R. S. Armstrong & Bro. Co., Atlanta, Ga.
CANADIAN AGENTS: Canadian Fairbanks-Morse Co., Toronto and Montreal.
FOREIGN REPRESENTATIVES: Benson Brothers, Ltd., Sydney; Schuchardt & Schutte, Berlin, Vienna, Prague; R. S. Stokvis & Zonen, Rotterdam, Brussels; M. Almeida & Cia. Sao Paulo Rio de Janeiro; Alfred Herberts, Ltd., Coventry, Calcutta, Osaka; Burton Fils, Paris; D. Drury & Co., Johannesburg; Akt. C. A. Herstad, Copenhagen; Ing. Ercole Vaghi, Milan; Allied Machinery Co., Barcelona, Zurich; Akt. Axel Christiernsson, Stockholm.

THERE IS NO SUBSTITUTE FOR QUALITY

Fleet as the Wind

SKELLY
Refractionated
GASOLINE

SKELLY

750

REFINED BY THE MAKERS OF TAGOLENE MOTOR OIL

BOWLEGS LEADS IN NATURAL GASOLINE

(Continued from Page 80)

manufacturers have been required to take care of large volumes of gas. The practice is to return the residue gas from the plants to the wells, where it is recycled in the gas-lift operation. The recycled gas is then returned to the plants for the extraction of the gasoline. While this tends to increase the volume of gas, at the same time it reduces the gasoline content.

Compression Plants

This gas-lift operation is directly responsible for the wide application of the compressor-type plants in the Seminole Field. In some cases, the gasoline manufacturers have been asked to furnish the gas at 200 to 300 pounds pressure to operate the wells by the gas lift. In doing this, it is generally necessary to remove as much gasoline as possible through condensations of the heavier ends. Even in cases where the residue is simply boosted back to the leases at low pressures, certain manufacturers have believed the compression method of gasoline to be more economical than the usual oil-absorption method. In other types of installations, the low stage of the compressors is used to furnish the pressure necessary for the operation of the oil-absorption division of the natural gasoline plant, while the high stage was used to compress the gas to the pressure required for well operation. Still other plants are operated as oil-absorption units.

Every manufacturer has been compelled to work out the solution to his own problem; and in doing so, practically every method of plant operation has been utilized. The main idea has been to cooperate with the producing companies so that they could obtain the maximum production of crude oil. In carrying out this policy, if any sacrifices in efficiency had to be made, the natural gasoline manufacturer, rather than the crude oil producer, has made them.

It is probable that the natural gasoline output of the field will continue to increase for a short time at least. New wells are constantly being drilled, although in the older producing areas this new gas supply is being wholly or partially offset by the declines in the completed wells. It will be noted from the accompanying table that the production of the Earlsboro Pool is less than that of the Seminole and Bowlegs Pools despite the fact that the first-named is the largest producer of crude oil. This can be explained in part as being due to the fact that the pool is the latest to be developed. There is still considerable gas in the Earlsboro Pool which is not connected to a plant for the extraction of the natural gasoline. Plants now being built or contemplated will take care of this excess gas.

TOTAL PRODUCTION OF GREATER SEMINOLE AREA

(Continued from Page 77)

Sparks	1,822,943
Mid-Continent Pet. Corp.:	
McCumber	175,416
Mid-Kansas Oil & Gas Co.:	
Anderson	34,317
Phillips Petroleum Co.:	
Graham	332,275
Dunnaway	1,610
The Philmack Co.:	
Dobbs	113,626
Prairie Oil & Gas Co.:	
Baker	28,081
Davis	355,479
Graham	261,593
Stidham	778,025
Roxana Petroleum Corp.:	
Spencer	352,091
Sinclair Oil & Gas Co.:	
Forman	699
Skelly Oil Co.:	
Spencer	390,645
The Texas Company:	
Rodgers	624,596
Tidal Oil Co.:	
Watkins	542,255
Twin-State Oil Co.:	
Baker	226,915
Hearn	172,180
Total Earlsboro	18,374,115
Seminole	
Carter Oil Co.:	
D. Carter	139,300
J. Carter	172,349
F. Carter	434,010
Creamer	3,896
R. Cudjo	711,304
W. Cudjo	113,366
Gilliland	142,846
W. Grisso	1,066,254
Knapp	393,045
M. Killing	2,709,418
G. Killing	630,565
Lukes	919,950
Ponder	7,320
Simpson	50,354
Strother	1,037,607
Vierson	210,265
Amerada Petroleum Corp.:	
Fixico	1,382,211
Killings	585,500
Rentie	568,828
Atlantic A. O. P. Co.:	
N. Cudjo	512,581
Barnsdall Oil Co.:	
Carter	2,233,752
Henry	45,382
Jones	940,559
Empire Gas & Fuel Co.:	
Grisso	185,349
Wilson	416,021
Gypsy Oil Co.:	
Butler	295,621
Carter	871,923
Cudjo	111,571
Fixico	192,964
Harjo	326,630
Wolf	1,320,653
Independent Oil & Gas Co.:	
P. Fixico	128,182
Harjo	64,183
Independent-Garland:	
T. Fixico	1,729,939
Independent-Interocean:	
Jones	592,532
Indian Territory Illuminating Oil Co.:	
Bowlegs	1,907,218
Gooden	174,022
Harjo	332,619
James	721,813
Reed	51,125
Kingwood-Roxana:	
Johnson	533,664
Magnolia Petroleum Co.:	
Franks	517,693
Mid-Continent Petroleum Corp.:	
Rentie	1,106,935
Tayeche	830,319
Mid-Kansas Oil & Gas Co.:	
Pressley	1,638
Wilkins	150,896
Johnson	45,138
Phillips Petroleum Co.:	
Strothers	79,030
Philmack-McCulloch:	
Butler	601,947
Mid-Kansas Oil & Gas Co.:	
Jackson	1,687
Prairie Oil & Gas Co.:	
Gross	63,951
Mason	133,344
Spencer	7,574
Strothers	1,696,682
Pure Oil Co.:	
Strother-A	3,900,332
Strother-B	522,159
Strother-C	3,196
Roxana Petroleum Corp.:	
Harber	147,064
Lashley	42,999
Sinclair Oil & Gas Co.:	
Carter	13,301
Cudjo-A	1,444,666
Cudjo-B	1,391,246
Dicey	87,168
Fixico	593,096
T. B. Slick:	
Cudjo	381,799
Franks	2,023,962
Giblet	364,698
Superior Oil Corp.:	
Cudjo	1,220,453
The Texas Company:	
Strother	3,177
Mayhue	35,418
Tidal Oil Co.:	
Carter	624,749
Fixico	1,426,137
D. Harjo	113,202
T. Harjo	106,934
Mayhardy	1,013,538
Tayeche	613,327
Turman Oil Co.:	
Cudjo	615,171
Grisso	239,505
Jones	701,615
Total Seminole	47,922,437
Searight	
Carter Oil Co.:	
Davis	1,573,772
Frazier	1,384,205
Kiker	6,286
Scott	11,320
Gypsy Oil Co.:	
Cudjo	229,923
Mid-Continent Petroleum Corp.:	
Grayson	1,758,052
Saloche	1,128,425
Prairie Oil & Gas Co.:	
Cannon	2,340
Carter	420
Houck	1,899
Kincaid	1,108,761
Weimer	2,550
Pure Oil Co.:	
Aldridge	489,428
Roxana Petroleum Corp.:	
Strother	266,447
Sinclair Oil & Gas Co.:	
Polly	359,741
Twin State Oil Co.:	
Cudjo	177,263
H. F. Wilcox Oil & Gas Co.:	
Chupco	397,292
Total Searight	7,898,124
Summary	
Bowlegs	23,566,886
Earlsboro	18,374,115
Searight	7,898,124
Seminole	47,922,437
Grand Total	97,761,562

CLASSIFIED AS OIL LANDS

The Secretary of the Interior in summarizing the classification of public lands made by the Geological Survey during August, states that nearly 3,000 acres of land in Wyoming were defined as within the known geologic structure of producing oil and gas fields under the act of February 25, 1920.

GENERAL OFFICES
65 BROADWAY,
NEW YORK

AMERADA
CORPORATION

(Operating Subsidiary)

AMERADA PETROLEUM CORPORATION
PRODUCERS of CRUDE OIL and
NATURAL GASOLINE

PETROLEUM BUILDING
TULSA, OKLAHOMA

TIDAL OIL COMPANY

TIDAL OSAGE OIL COMPANY

Producers

TIDAL REFINING COMPANY

TIDAL-WESTERN OIL CORPORATION

Refiners

TIDAL BUILDING TULSA, OKLA.

Subsidiaries of

TIDE WATER OIL COMPANY

Manufacturers of

VEEDOL FORZOL TYDOL

11 BROADWAY NEW YORK, N. Y.

MAJOR SOURCE OF HIGH GRAVITY CRUDE

(Continued from Page 82)

DISTILLATION, BUREAU OF MINES HEMPEL METHOD

Air Distillation—Barometer 733 mm. First drop: 31° C. (88°F.)

Temperature °C	Per cent cut	Sum per cent	Specific Gravity of cut	°A.P.I. Cut	Viscosity at 100°F.	Cloud Test °F.	Temperature °F.
Up to 50	1.6	1.6	0.645	87.9	.....	.....	Up to 122
50- 75	2.6	4.2	.668	80.3	.....	.....	122-167
75-100	5.6	9.8	.707	68.6	.....	.....	167-212
100-125	7.5	17.3	.732	61.8	.....	.....	212-257
125-150	6.5	23.8	.755	55.9	.....	.....	257-302
150-175	5.9	29.7	.775	51.1	.....	.....	302-347
175-200	5.0	34.7	.790	47.6	.....	.....	347-392
200-225	5.2	39.9	.807	43.8	.....	.....	392-437
225-250	5.2	45.1	.821	40.9	.....	.....	437-482
250-275	5.9	51.0	.835	38.0	.....	.....	482-527
Vacuum distillation at 40 mm.							
Up to 200	3.6	3.6	.856	33.8	41	10	Up to 392
200-225	5.6	9.2	.862	32.7	47	25	392-437
225-250	5.2	14.4	.879	29.5	62	50	437-482
250-275	4.3	18.7	.891	27.3	99	65	482-527
275-300	4.4	23.1	.903	25.2	180	80	527-572

Carbon residue of residuum 6.5 per cent. Carbon residue of crude 1.6 per cent.

APPROXIMATE SUMMARY

	Per Cent	Specific Gravity	°A.P.I.	Viscosity
Light gasoline	9.8	0.687	74.5	.....
Total gasoline and naphtha	34.7	.739	60.0	.....
Kerosene distillate	10.4	.814	42.3	.....
Gas oil	13.5	.849	35.2	.....
Nonviscous lubricating distillate	9.0	.866-.891	31.9-27.3	50-100
Medium lubricating distillate	5.3	.891-.906	27.3-24.7	100-200
Viscous lubricating distillate	1.2	.906-.909	24.7-24.2	Above 200
Residuum	25.3	.943	18.6	.....
Distillation loss	0.6	...	...	.....

SAMPLE NUMBER 27,240

Oklahoma, Bowlegs Field, Seminole County, I. T. I. O. Co., B. F. Davis Well No. 1, Section 13-8-6 Indian, Wilcox sand 4,194-4,200 feet; specific gravity, 0.834; A.P.I. gravity, 38.2 degrees; per cent sulphur, 0.31; per cent water, nil; Saybolt Universal viscosity at 70 degrees Fahrenheit, 45 seconds; pour point below 5 degrees Fahrenheit; Saybolt Universal viscosity at 100 degrees Fahrenheit, 43 seconds. Color, green.

DISTILLATION, BUREAU OF MINES HEMPEL METHOD

Air Distillation—Barometer 746 mm. First drop: 28°C. (82°F.)

Temperature °C	Per cent cut	Sum per cent	Specific Gravity of cut	°A.P.I. Cut	Viscosity at 100°F.	Cloud Test °F.	Temperature °F.
Up to 50	2.3	2.3	....	....	.....	.....	Up to 122
50- 75	3.2	5.5	0.661	82.6	.....	.....	122-167
75-100	6.7	12.2	.706	68.9	.....	.....	167-212
100-125	7.7	19.9	.734	61.3	.....	.....	212-257
125-150	5.9	25.8	.755	55.9	.....	.....	257-302
150-175	6.0	31.8	.744	51.3	.....	.....	302-347
175-200	5.3	37.1	.792	47.2	.....	.....	347-392
200-225	5.4	42.5	.810	43.2	.....	.....	392-437
225-250	5.4	47.9	.824	40.2	.....	.....	437-482
250-275	5.8	53.7	.838	37.4	.....	.....	482-527
Vacuum distillation at 40 mm.							
Up to 200	2.9	2.9	.859	33.2	41	5	Up to 392
200-225	5.1	8.0	.863	32.5	46	20	392-437
225-250	4.7	12.7	.881	29.1	58	45	437-482
250-275	4.4	17.1	.892	27.1	87	60	482-527
275-300	51.	22.2	.903	25.2	165	80	527-572

Residuum 23.9 per cent. Distillation loss 0.2 per cent.
Carbon residue of residuum 6.8 per cent. Carbon residue of crude 1.6 per cent.

APPROXIMATE SUMMARY

	Per Cent	Specific Gravity	°A.P.I.	Viscosity
Light gasoline	12.2	0.686	74.8	.....
Total gasoline and naphtha	37.1	.736	60.8	.....
Kerosene distillate	10.8	.817	41.7	.....
Gas oil	13.0	.852	34.6	.....
Nonviscous lubricating distillate	8.5	.869-.894	31.3-26.8	50-100
Medium lubricating distillate	6.5	.894-.908	26.8-24.3	100-200
Viscous lubricating distillate	....	....	....	Above 200
Residuum	23.9	.952	17.1	.....
Distillation loss	0.2	....	....	.....

SAMPLE NUMBER 27,337

Oklahoma, Earlsboro Field, Seminole County, Prairie Oil & Gas Co.'s well No. 1, Section 24-9n-5e Indian, Wilcox sand 4,230-4,234 feet; specific gravity, 0.810; A.P.I. gravity, 43.2 degrees; per cent sulphur, 0.31; per cent water, nil; Saybolt Universal viscosity at 70 degrees Fahrenheit, 38 seconds; pour point below 5 degrees Fahrenheit; Saybolt Universal viscosity at 100 degrees Fahrenheit, 37 seconds. Color, green.

DISTILLATION, BUREAU OF MINES HEMPEL METHOD

Air Distillation—Barometer 735 mm. First drop: 24°C. (75°F.)

Temperature °C	Per cent cut	Sum per cent	Specific Gravity of cut	°A.P.I. Cut	Viscosity at 100°F.	Cloud Test °F.	Temperature °F.
Up to 50	6 0	6 0	0.635	91 3	....	..	Up to 122
50 to 75	4 2	10 2	.671	79.4	....	..	122 to 167
75 to 100	6.6	16 8	.709	68 1	....	..	167 to 212
100 to 125	7 8	24.6	.736	60.8	....	..	212 to 257
125 to 150	6 2	30 8	.757	55 4	....	..	257 to 302
150 to 175	6 1	36.9	.778	50.4	....	..	302 to 347
175 to 200	4.4	41 3	.795	46 5	....	..	347 to 392
200 to 225	5 2	46 5	.812	42.8	....	..	392 to 437
225 to 250	4.8	51 3	.827	39 6	....	..	437 to 482
250 to 275	5.1	56 4	.841	36 8	....	..	482 to 527
Vacuum distillation at 40 mm.							
Up to 200	2 9	2 9	.846	35 8	41	10	Up to 392
200 to 225	4 5	7.4	.852	34 6	47	30	392 to 437
225 to 250	4 5	11.9	.868	31 5	61	50	437 to 482
250 to 275	3 6	15 5	.882	28.9	95	70	482 to 527
275 to 300	4 1	19.6	.891	27.3	185	80	527 to 572

Carbon residue of residuum, 6.1 per cent. Carbon residue of crude, 1.2 per cent.

APPROXIMATE SUMMARY

	Per Cent	Specific Gravity	°A.P.I.	Viscosity
Light gasoline	16 8	0.673	78.8	.....
Total gasoline and naphtha	41 3	.726	63 4	.....
Kerosene distillate	5 2	.812	42.8	.....
Gas oil	16.1	.840	37 0	.....
Nonviscous lubricating distillate	7.8	.853-.883	34 4-28 8	50-100
Medium lubricating distillate	5.6	.883-.895	28 8-26.6	100-200
Viscous lubricating distillate	....	....	....	Above 200
Residuum	19 0	.955	16.7	.....
Distillation loss	5.0	....	....	.....

OIL FIRE PREVENTION RESULTS REVIEWED

By N. O. Fanning

New York Bureau, The Oil and Gas Journal

NEW YORK, Sept. 26.—Frank A. Epps, vice chairman of the American Petroleum Institute's general committee on fire prevention and head of the Tide Water Associated Oil Co.'s fire protection department, in an impromptu address before a group of visiting firefighters here reviewed results obtained by his company in limiting blazes. He stated that licorice, alum and baking powder solutions, when pumped on a burning oil tank, form a floating blanket of dense foam made of tough, lasting bubbles filled with carbonic acid gas. This is the most effective means of extinguishing oil fires and saves the oil industry millions of dollars annually in fire losses.

The Tide Water Oil Co., subsidiary of the Tide Water Associated Oil Co., was the first oil company in the United States to put its fire protection work on a central, organized basis. Its department maintains inspection and supervision over all producing, refining, transportation, marketing and other properties of the company from coast to coast. The refineries have extensive forces of firefighters and auxiliary battalions always on call, headed by full-paid fire chiefs and fire marshals. Fire losses have been reduced 80 per cent and the department has saved its cost between five and six times annually ever since its organization.

Other companies have adopted much of the procedure worked out by Tide Water. The present fire prevention standards used by the entire industry for oil tank installations were worked out by a committee of three engineers, of which Mr. Epps was a member, he stated.

The Oil Bank of America

Out of the development of every basic industry rises one financial institution particularly identified with that industry. - - - - In petroleum it is The Exchange Banks of Tulsa. Leadership earned by a superior service based on intimate knowledge.

The personal and practical experience of the directors of The Exchange National Bank and the Exchange Trust Company in every branch of the oil business, combined with a vast system of credit information is available to customers of The Exchange Banks.

Plan to Meet Your Friends in Our Lobby
During The International Petroleum Exposition.

EXCHANGE BANKS OF TULSA

The Exchange National Bank — The Exchange Trust Company

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Resources Exceed $50,000,000

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EVERETT FILLEY
Superintendent of Production in Oklahoma, The Texas Company.

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President, Phillips Petroleum Co

CLYDE ALEXANDER
Vice President and General Manager, Phillips Petroleum Co.

A. A. BEARD
Vice President and General Manager, Tidal Oil Co.

ROBERT A. BONNELL
General Superintendent, Tidal Oil Co.

E. H. MOORE
President, Independent Oil & Gas Co.

R. B. PRINGLE
Vice President, Independent Oil & Gas Co.

H. F. WILCOX
President, H. F. Wilcox Oil & Gas Co.

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E. W. MARLAND
President, Marland Oil Co.

C. C. BROWN
Vice President, Marland Oil Co. of Oklahoma.

You Can't Hatch

a thoroughbred chicken from a dung-hill's egg.

The Forging that the Burt Swab body is made from is shown in this cut. A Swab can be no better than the material it is made from. It will show it's breeding. High Carbon Steel shaped under the Hammer as shown, makes the best Swab Body ever produced.

The same skill and quality of material enter into every part of our product. We do not have to imitate any one nor say the Burt Swab is "Just as good as." Leading Engineers and production men say it is the only Swab on the market. They have tested it under all conditions and compared it with others. Not a single instance has it failed to make good. A trial costs you nothing. Will you let us try to convince you?

Mfg. by THE BURT CORP.

316 S. Frankfort - - - - - - - - Tulsa, Okla.

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NATIONAL TANK CO.
ATLAS SUPPLY CO.
WORTHINGTON MCH'N. CO.
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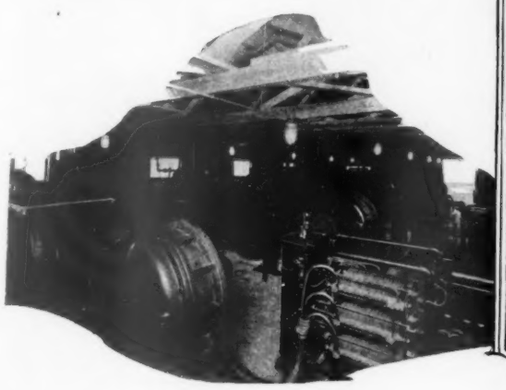
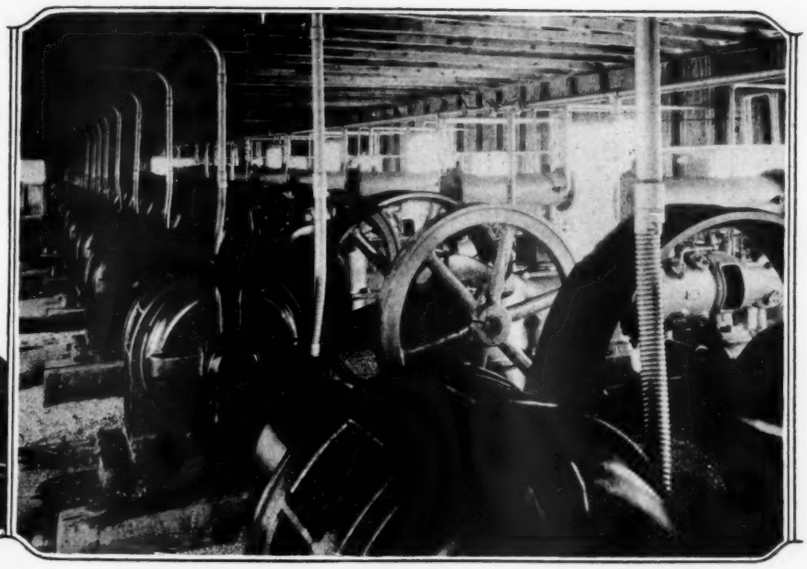
TULSA RIG, REEL MFG. CO.
Oil Field Supply Concerns in the Seminole Field
SLATER BROS.
PRODUCERS LUMBER CO.
AMERICAN IRON WORKS
McGRAW-BAUGHMAN-BEARLY LUMBER CO.

G-E Motors driving compressors at Air-Lift Station of Amerada Petroleum Co., Seminole, Okla. Below: Air-Lift Station of Marland Refining Co., Graham Field, Cowley Co., Kansas, equipped with G-E Motorized Power.





Motorizing the Air-Lift

A sudden big demand for motorized air-lifts! G-E motors were ready.

Of the first 5000 horsepower in electric motors purchased last fall for the Seminole, Okla. field, 4000 h.p. was General Electric—mostly for air-lift work.

G-E motors, time-tried in the oil fields, and proof against shut-downs, were installed because oil operators knew that shut-down losses are seldom, if ever, recovered—and that G-E motors were in stock near their operations, ready for immediate use, backed by G-E service.

The air-lift development in every oil field finds G-E Motors, G-E Service, and on-the-spot distribution a powerful tool to its hand.

General Electric supplies complete electric equipment to the oil industry. With warehouse facilities close to your operations, G-E readily furnishes motors, controllers, transformers, arresters and other protective devices, capacitors for power factor improvement, etc.

G-E oil field specialists and G-E service at: Dallas, Denver, Houston, Kansas City, Oklahoma City, Tulsa, Los Angeles, San Francisco.

Apply the proper G-E Motor and the correct G-E Controller to a specific task, following the recommendations of G-E specialists in electric drive, and you have G-E Motorized Power

Motorized Power
—fitted to every need

200-52A

GENERAL ELECTRIC

GENERAL ELECTRIC COMPANY, SCHENECTADY, N. Y., SALES OFFICES IN PRINCIPAL CITIES

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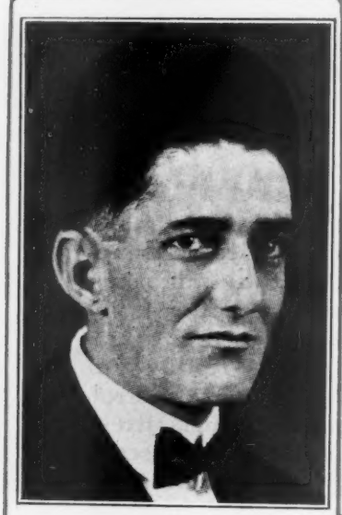
L. B. RIDDLE
Vice President, Shaffer Oil & Refining Co.

H. N. COLE
Vice President, Pure Oil Co.

R. F. GARLAND
President, Garland Oil Co.



CHARLES A. WARNER
Oklahoma Manager, Houston Oil Co.

JAMES G. LYONS
Oil Producer.

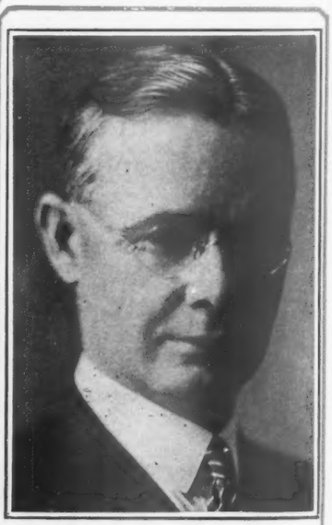
N. T. GILBERT
Receiver, Turman Oil Co.

GEORGE N. SNEDDEN
President, Inter Ocean Oil Co.

GEORGE F. GETTY
President, Minnehoma Oil Co.

ARCH H. HYDEN
Superintendent, Minnehoma Oil Co.

W. W. FLEMING
Vice President, Mid-Kansas Oil & Gas Co.



E. J. GORMAN
General Manager, Twin State Oil Co.

In Seminole

Butler Bolted Tanks Are on Duty!

Protects Your Men!

The Butler Clean-Out Opening is large—measuring 2′ x 4′! It is not a back breaker. It is convenient for an entire cleaning out of the tank. Because of the size of this opening the work can be done easily, quickly and more safely.

All bolts are removable from the outside!

These reliable dealers erect Butler Bolted Tanks and are ready to serve you speedily:

M & V Tank Co., Wichita Falls, Olney, Nocona, Cross Plains, Albany, Cisco, Isom, Pampa and Brownwood, Texas.

Drane-Humphrey Co., at San Angelo, Big Lake and McCamey, Texas, and Carlsbad, New Mexico.

Drane Tank Co., at Tulsa, Holdenville, Seminole, Hallett and Shawnee, Oklahoma; Eldorado and Madison, Kansas.

M. A. Trimmer at Blackwell, Oklahoma.

Southern Steel Company, at San Antonio and Mirando City, Texas.

Champion Supply, at Casper, Wyoming.

Thomas Moran, at Oil City, Shreveport and Georgetown, Louisiana.

Continental Supply Co., at Kevin, Montana.

The Carter Oil Company is using the bolted tanks shown above for water storage in its portable gasoline plant. These tanks are located at Seminole, Oklahoma.

Not only here but also all over the Seminole Field Butler Bolted Tanks are on active duty. No wonder! Note these features that oil men like:

1. Massive machines punch all holes in all Butler sheets. So placement of all holes is dependable.

2. Butler sheets are large! There are fewer sheets and fewer seams. Less handling is needed and fewer chances for leaks result.

3. All sheets are made of blue annealed copper steel or 3/16″ tank plates for added strength and rigidity where needed.

The "Oil Field Tanks" catalog tells why speed is requested and secured from Butler. A copy will be sent on request at once. Send for the catalog today.

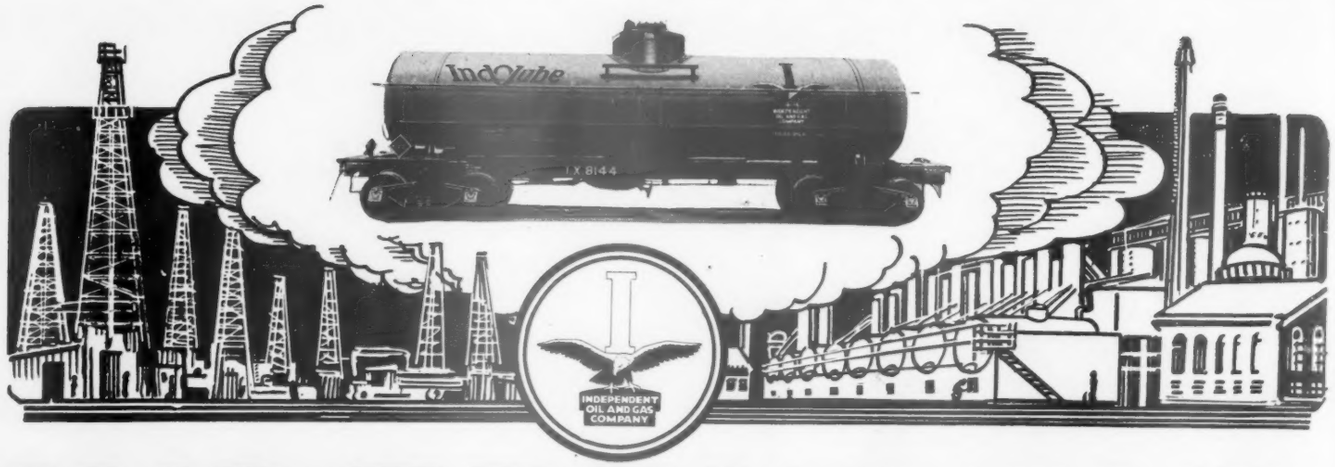
TRADE STEEL BUTLER PRODUCTS MARK

Butler Products include: Ready-Made Steel Buildings, Cans, Funnels, Buckets, Measuring Pumps, Truck Tanks, Underground Tanks, Storage Tanks, Bolted Tanks, Etc.

Butler Manufacturing Company

Kansas City, Mo. **Minneapolis, Minn.**

New York Office: Room 701, 44 Whitehall St.



INDEPENDENT

PRODUCTS

From the

"cream of the crude"

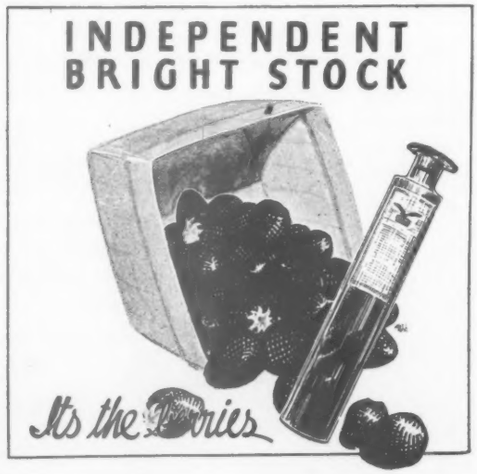
REG. U.S PAT. OFF

IndOlube

INDOLUBE is a high-quality motor oil made from the cream of Okmulgee Crude . . . a motor oil that delights the user . . . that leaves a minimum of carbon deposit . .. a minimum of crankcase dilution . . . that makes the running motor hum with quiet power . . . that affords a proper and sustaining lubrication, adequately sealing compression leaks.

The up-to-date refinery equipment that produces INDOLUBE will permit nothing but the very best.

The Okmulgee Refinery of the Independent Oil and Gas Company is one of the most up-to-date plants for the refining of high-grade petroleum products. The uniform quality found in Independent Products comes as a direct result of the high-quality crude used, the splendid equipment and scientific methods employed. A sufficient volume pours through the Okmulgee Refinery to insure a steady, even standard of performance—INDEPENDENT Performance.



IndOlene

INDOLENE is INDOLUBE'S power twin—a superior gasoline of uniform quality . . . a quick starting source of new energy to the motor, and refined in the same refinery with the same scientific care and from the same choice crude as INDOLUBE.

For a fast get-away or a long, steady pull - - - INDOLENE.

INDEPENDENT OIL AND GAS COMPANY

PRODUCERS AND REFINERS

KENNEDY BUILDING

TULSA. OKLA. U.S.A.

Exhibitors at Petroleum Exposition

Equipment Used in Every Branch of Petroleum Industry Is on Display With Experts to Describe Advantages

Firms exhibiting at the Fourth International Petroleum Exposition, together with a brief outline of equipment on display and names of those in charge of the booths follow:

Oklahoma Building

Acme Fishing Tool Co., Parkersburg, W. Va.; booth 98, exhibiting fishing and drilling tools. In charge: J. A. Williamson, A. D. Nutter and McTaggart.

Allis-Chambers Manufacturing Co., Milwaukee, Wis.; booths 77-78, exhibiting centrifugal pump unit, oil well counter shaft oil field motors and transformers. In charge: D. M. McCargar, oil field specialist; Walter Greist, sales engineer, transmission division, and L. W. Grothaus, assistant manager electrical department.

Aluminum Corporation of America, New Kensington, Pa.; booths 10-11, exhibiting aluminum paint, shingles, pipe fittings and chemical apparatus. In charge: Iuen L. Dobyns, Paul Thornton, Frank H. Bentley, I. C. Honneger and H. V. Churchill.

American Fomon Co., Philadelphia, Pa.; booth 33, exhibiting fire apparatus. In charge: R. M. Urquhart, W. G. Grant and C. L. Moore.

American Car & Foundry Co., St. Louis, Mo.; booth 50, exhibiting dome covers, safety valves, outlet valves and Skelly peep sights and step rule gauges. In charge: F. W. McGruth, J. B. Herman and J. D. Sailor.

Amstrong Brothers Tool Co., Chicago, Ill.; boo.h 103, exhibiting pipe tools, wrenches. In charge: C. F. Adams, F. B. Dowlin, J. M. Kane, Horace Armstrong and G. R. Waddell.

Atlas Lumnite Cement Co., St. Louis, Mo.; booth 104, exhibiting Lumnite cement, Atlas Portland cement and Atlas gypsum. In charge: C. S. McArdle, A. Chesser and Hubert Foster.

Atmore, Robert N., Co., Tulsa, Okla.; booths 94-95, exhibiting fluid packed pump, sucker rod, sockets, seats and balls. In charge: R. N. Atmore, O. L. Frame, E. L. Wilson and Earl Morriss.

Baker Casing Shoe Co., Huntington Park, Calif.; booth 113, exhibiting oil well casing and drilling specialties. In charge: G. M. Anderson, A. A. Baker, R. G. Gove.

Barnsdall Refineries, Tulsa, Okla.; booths 12-13, exhibiting oils and gasoline. In charge: John T. Owen, W. J. Kinderman and O. J. Herrelson.

B. & A. Specialty Co., Tulsa, Okla.; booths 96-97-98-113-114, exhibiting oil field specialties. In charge: P. V. McGivern, J. W. Sanders, O. T. Crites, W. A. Davis.

Bennett Pumps Co., Muskegon, Mich.; booth 105, exhibiting lubricating equipment. In charge: Thomas B. Bennett, S. H. Freusdorf and Sam W. Smith.

Bethlehem Foundry & Machine Co., Bethlehem, Pa.; boo.h 54, exhibiting Wedge clay burner, used for revivication of fuller's earth. In charge: G. Thorp and J. R. Barrett.

Binks Spray Equipment Co., Chicago, Ill.; booth 92, exhibiting spray cooling systems and spray painting machinery. In charge: W. A. Merrill, C. R. Kranz, F. Van de Bogart and O. D. Soeliner.

Braden Steel & Wrench Co., Tulsa, Okla.; booths 79 and 80, exhibiting structural steel buildings and steel derricks. In charge: H. V. Carter, J. W. Brown, J. E. Buchan, F. R. Coggeshall, W. A. Carey and Arthur Day.

Brooks Engineering Co., Los Angeles, Calif.; booths 71-72, exhibiting tank equipment and vapor recovery systems. In charge: Frank T. Long, S.ephen H. Brooks and J. P. Dobbins.

C. F. Braun & Co., Alhambra, Calif.; booths 83-128, exhibiting Gaso plant and refining equipment, showing illuminated refining process. In charge: E. E. Dorresten, H. R. Lamberth, A. B. Elliott and A. T. Krook.

Brown Tool Co., Breckenridge, Tex.; booth 133, exhibiting fishing tools and underreamers. In charge: C. H. Brown, C. M. Neal and H. A. Alexander.

Buda Company, Harvey, Ill.; booths 67-68-69-70, exhibiting Buda 150 horsepower drilling outfits, 150 horsepower Buda compressors, 10 K-W electric lighting unit, Buda pos. hole digger, Buda steam turbin, bench grinding wheel. In charge: Arthur Achtman, district sales manager; Ralph Mangan, sales manager, industrial division; C. E. Fruden, chief engineer; L. M. Viles, president; F. E. Place, vice president and general manager; P. J. Dasey, field engineer.

Cameron Tool & Supply Co., Cameron, W. Va.; booths 27-28, exhibiting Monroe talon rope grabs. In charge: Dale Rees, Harry Chaddoch and V. Monroe.

C. F. Camp Co., Tulsa, Okla.; Booths 87-88-123-124, exhibiting complete line of Waukesha motors, drilling and pumping equipment, cable and rotary C. H. & E. portable pumps and Gardner pumps. In charge: C. F. Camp and E. E. Robbins.

J. A. Campbell, Long Beach, Calif.; booth 111, exhibiting oil froth absorbers and duplex tank control and back valves. In charge: J. A. Campbell, A. L. Campbell and R. C. Flournoy, Jr.

Casey Hedges Co., Chattanooga, Tenn.; booth 81, exhibiting model of a multipass, semivertical water tube boiler. In charge: C. R. Herron, district salesman, and L. H. Richmond.

Clear Vision Pump Co., Wichita, Kans.; booth 108, exhibiting clear vision gasoline pumps and compressors and Davis master oil fountains. In charge: J. C. Riggs, H. L. Gant and Bert Peck.

Climax Engineering Co., Clinton, Iowa; booths 130-131-132, exhibi.ing gasoline oil well drilling engines. In charge: H. L. Seenksen, Mr. Rown, H. Waters, Earl Crippen, L. Dunleavy, H. H. Lahmeyer, W. Williamson and H. McCullough.

Coen Company, San Francisco, Calif.; booth 29, exhibiting gas, oil and pulverized fuel burners. In charge: W. W. Beidleman, W. W. Miller and John Zink.

Dearnborn Chemical Co., Chicago, Ill.; booth 57, exhibi.ing paints and pipe coverings. In charge: George M. Massen, P. M. Moore and Theodore F. Kittredge.

DeLaval Separator Co., Chicago, Ill.; booth 16, exhibiting centrifugal oil purifiers. In charge: C. J. Harkins, C. B. Schmidt, A. R. Rose and A. B. Sears.

DeVilbiss Company, Toledo, Ohio; booth 5, exhibiting spray guns. In charge: O. F. Wilcox and E. L. Mitchell.

Dodge Electric Co., Tulsa, Okla.; booth 23, exhibiting motor department, electric motors and rewinding. In charge: I. A. Bartlett.

Dow Pump & Diesel Engine Co., Alameda, Calif.; booth 37, exhibiting drawings, diagrams, photos and parts Dow surge type hot oil pumps. In charge: Wallace H. Dow.

Electric Controller & Manufacturing Co., Cleveland, Ohio; booth 76, exhibi.ing automatic compensators and control switches. In charge: A. H. Ehrhart, district salesman.

Electric Machinery Manufacturing Co., Minneapolis, Minn.; booth 76, exhibiting synchronous motors and condensers. In charge: R. H. Olson, district sales manager; Truman Hibbard, chief engineer.

Evansville Malleable Castings Co., Evansville, Ind.; booth 8, exhibiting malleable cas.ings, Eilar pipe saddles, repair clamps, collar clamps, river clamps, alignment clamps. In charge: D. E. Eller, field representative; A. S. Anderson, secretary-treasurer.

Falk Corporation, Milwaukee, Wis.; booth 14, exhibiting flexible couplings. In charge: W. L. Schneider.

Fluid Packed Pump Co., Los Nietos, Calif.; booth 94-95, exhibi.ing fluid packed pumps, sucker rod socket, seats and balls. In charge: R. N. Atmore, O. L. Frame, E. L. Wilson and Earl Morris.

Fortier Manufacturing Co., Tulsa, Okla.; booth 119, exhibiting tubing protectors. In charge: U. D. Fortier.

France Packing Co., Philadelphia, Pa.; booth 102, exhibiting floating metallic packing. In charge: E. A. France, A. W. France, Jack Wheeler, H. E. Unsell.

Fuller Machine & Forge Works, Tulsa, Okla.; booths 94-95, exhibiting stuffing boxes, belt tightener, sucker rod hooks and elevators. In charge: R. N. Atmore, O. L. Frame, E. L. Wilson and Earl Morris.

General Motors Corp., Detroit, Mich.; boo.hs 73-74-75, exhibiting "Cannon Ball" two-ton truck, also two-ton service truck. In charge: E. Goodloe, manager, general manager, Tulsa; Pat O'Conner, Detroit, manager petroleum division; C. M. Eason, Detroit, engineering department; J. H. Phillips, Detroit, national sales manager; J. H. Hickman, Pontiac, service depar.ment.

Goulds Pumps, Inc., Seneca Falls, N. Y.; booth 84, exhibiting P. L. and gas, oil and water pumps, circulating and refining pumping equipment. In charge: R. T. Roberts.

Grant Oil Tool Co., Los Angeles, Calif.; booth 36, exhibiting underreamer.

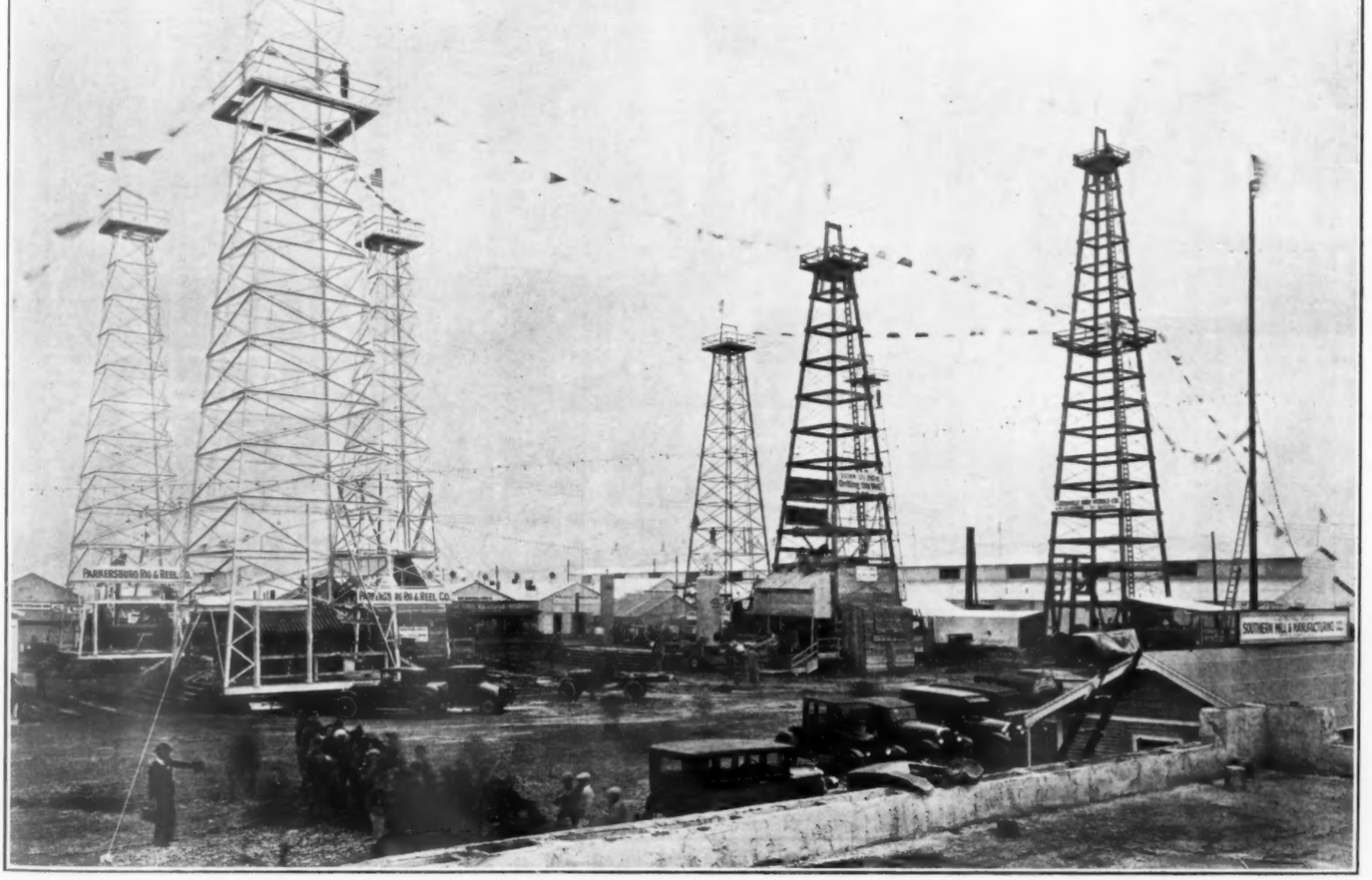
Griscom-Russell Co., New York, N. Y.; booths 42-43, exhibiting heat exchangers, bentube sections, refinery equipment. In charge: Russell C. Jones, K. B. Ris, Coy, R. W. Thompson, Arthur Martin and J. W. McCausland.

Hercules Motors Corp., Canton, Ohio; booths 59-60-1-2-3-4, exhibiting gasoline engines and power units. In charge: D. W. Latta, R. J. Sco.t and T. K. Senior.

Hutchison Engineering Co., Chicago, Ill.; booth 6, exhibiting electric ligh.ing plants. In charge: Frank Hutchison.

Howell Valve Works, Kansas City, Mo., booth 35, exhibiting lease tank valves. In charge: H. H. Howell, president.

Insulating Products Co., Chicago, Ill.; booth 58, exhibiting Webers No. 48 insulating cement; Webers packing fiber. In



Foreground of Fourth International Petroleum Exposition.

charge: W. S. Bryant, W. J. Greer, H. E. Rowoldt and J. H. Hoffman.

International Filter Co., Chicago, Ill.; booth 49, exhibiting water softening, filtrating and steam purifiers equipment. In charge: L. K. Cecil, George E. Brown, Jr., W. I. Hughes and L. D. Matter.

Jackson Engineering & Equipment Co., Fluor Construction Co., Tulsa, Okla.; booths 40-41, exhibiting cooling towers for gasoline and refining industries. In charge: A. W. Burkett, G. M. Jackson and E. J. Hudson.

Keystone Driller Co., Joplin, Mo.; booth 85, exhibiting drilling equipment. In charge: Guy A. Roos, Frank Oliver and F. B. Ransom.

Kohler & Kohler, Sheboygan, Wis.; booths 20-21, exhibiting electric plants. In charge: W. L. Langley, F. O. Gelvin, C. W. Moody and H. M. Curfman.

Leavitt Machine Co., Orange, Calif.; booth 97, exhibiting valve reseating equipment. In charge: W. H. Graves.

Lunkenheimer Co., Cincinnati, Ohio; booths 101 and 102, exhibiting valves and fittings. In charge: Harry A. Burdick, Marshall N. Stickel, Joseph Waldeck, J. Frank Ward, Jr., and Elmer R. Tieberman.

A. J. McEwan Co., Tulsa, Okla.; booth 35, exhibiting "McEwan" regulators. In charge: Andy McEwan and Bill Beckett.

MacClatchie Manufacturing Co., Compton, Calif.; booth 110, exhibiting automatic cathead, rotary underreamer, cement head. In charge: W. P. Hart, J. W. MacClatchie.

Manzel Brothers, Buffalo, N. Y.; booth 51, exhibiting force feed lubricators. In charge: Albert S. Isch and W. C. Jackson.

Marland Refning Co., Ponca City, Okla.; booths 24-25, exhibiting motor oils and gasoline. In charge: Frank Brimm, Warner Lewis and T. P. Gilmer.

Martin-Loomis Corp., Los Angeles, Calif.; booth 36, exhibiting weight indicator. In charge: W. R. Martin and M. W. Haines.

Mason Regulator Co., Boston, Mass.; booth 34, exhibiting reducing valves, hydraulic regulators, casing head regulators, balanced valves, etc. In charge: R. C. Flournoy, Jr., and F. Kennett Morrison, sales manager.

Mid-Continent Map Co., Tulsa, Okla.; booth 22, exhibiting abstract maps. In charge: E. K. Frank, M. H. Robers, Tom Darling, Sam Rhodes, Tom Martin and Cecil Wainwright.

Mid-Continent Petroleum Corp., Tulsa, Okla.; booths 44-45-46-47, exhibiting "Diamond" petroleum products. In charge: J. C. Miller, M. H. Duffield, O. E. Eckert, M. C. Shipley, M. Byrnes, H. D. Fawcett and Fred Smith.

E. E. Miller, Fullerton, Calif.; booth 118, exhibiting slush pump valves and pistons. In charge: E. E. Miller and Otto A. Miller.

Missouri Paint & Varnish Co.; booth 119, exhibiting paint and plastic cement. In charge: F. C. Carrier.

National Tank Seal Co., Tulsa, Okla.; booth 119, exhibiting tank top seal and plastic tank cement. In charge: H. R. Tucker, F. C. Carrier, W. A. Dunigan and Robert R. Tucker.

New Way Motor Co.; booths 87-88-123-124, In charge: C. F. Camp.

Niles Tool Works Co., Hamilton, Ohio; booths 106-107, exhibiting pipe tools. In charge: B. A. Donohue, R. E. Laffler, L. E. Shultz, Fred Joos and Walter Herriff.

William W. Nugent & Co., Chicago, Ill.; booth 19, exhibiting oiling systems, oil filters, oiling devices, sight feed valves. In charge: Corliss D. Nugent and Charles Dickson.

R. D. Nuttall Co., Pittsburgh, Pa., booth 86, exhibiting pump and drill gear units. In charge: W. F. Barnes, R. W. Young, Charles Drolin, H. A. Tullige and C. L. Cranshaw.

Oil Conservation Engineering Co., Cleveland, Ohio; booths 82-129, exhibiting fire protection and prevention, evaporation elimination equipment. In charge: H. H. Fleming and J. T. Spalding.

Oklahoma Iron Works, Tulsa, Okla.; booth 55, exhibiting fishing tools, high-pressure equipment for connecting wells, high-pressure flow heads and steel alloy fittings, heavy-duty traveling block and crown block. In charge: Charles H. Fritz, R. Sloan and S. Sanford.

Pacific Tool Co., Los Angeles, Calif.; booth 15, exhibiting swabs, packers, long stroke pumps and specialties. In charge: Roy Renoef and Paul McCoy.

Parsons Company, Newton, Iowa; booth 9, exhibiting model of trenching machine, motion pictures. In charge: N. DeWind and G. A. Vaughn.

Petroleum Electric Co., Tulsa, Okla.; booth 76, exhibiting electrical oil field equipment. In charge: C. F. Dagwell and T. D. Williams.

Pittsburgh Steel Products Co., Pittsburgh, Pa.; booths 99-112, exhibiting seamless steel casing, tubing, drill pipe, still tubes and boiler tubes. In charge: S. E. Elder, C. V. Sally and E. T. Wible.

Pyrene Mfg. Co., Kansas City; booths 134-135, exhibiting fire prevention apparatus. In charge: J. J. Strang, manager; Ben Allen, Texas representative; Jim Hannah, Oklahoma representative; Mr. Durfee and Mr. Timpson.

Quimby Pump Co., Newark, N. J.; booth one-half of 56, exhibiting Quimby screw pump. In charge: W. A. Sawdon and J. L. Cunningham.

Robinson Orifice Fitting Co., Los Angeles, Calif.; booth 114, exhibiting gas measuring apparatus. In charge: A. Robinson.

Rock Island Plow Co., Rock Island, Ill.; booths 87-88-123-124, no exhibit. In charge: C. F. Camp.

Richart Perforating Co., Los Nietos, Calif.; booth 93, exhibiting two string perforator.

Rotary Supply Co., Los Angeles, Calif.; booth 36, exhibiting gasometer and stuffing box. In charge: A. B. Munn.

Camp, C. F., Co., booths 87-88-123-124. In charge: C. F. Camp.

Shaffer Tool Works, Brea, Calif.; 913 East First Street, Tulsa; booth 93, exhibiting casing heads, flow beans, rotary spear and rotary overshot. In charge: R. N. Atmore, E. L. Wilson, C. L. Frame and Earl Morriss.

Sherwin-Williams Co., Tulsa; Cleveland, Ohio; booth 53, exhibiting gas-proof paints, pipe line coatings. In charge: A. J. Tholin, A. W. Everett, W. F. Adams, Arthur Larkin, Cleveland; Clarence Severt, Harry Hull and W. B. Clark, district manager.

Skelly Oil Co., Tulsa; booths 38-39, exhibiting model refinery and refined products. In charge: W. G. Skelly.

Snap-On Wrench Co., 14 East Jackson, Chicago, Ill.; booth 52, exhibiting socket wrenches. In charge: H. H. Kerr, A. T. Hall and F. H. Wendell.

Southern Mill & Manufacturing Co., Tulsa; booth 30, exhibiting sectional wood houses. In charge: C. H. Ahrens, B. C. Holloway and Walter Ahrens.

Staytite Co., Houston, Tex.; booth 65, exhibiting oil conservation and tank equipment. In charge: Robert E. Connell, sales manager; George C. Schmidt, president.

The Sullivan Co., Memphis, Tenn.; booth 48, exhibiting cement accelerator, Kleen-A-Well removing paraffin and asphalt, Slush-Mix improved mud heavier. In charge: M. L. Walker, F. D. Sullivan, Joe McConnell.

Sullivan Machinery Co., 413 Peoples Gas Bldg., Chicago, Ill.; booths 91-120, exhibiting air-made well, diamond drills. In charge: John Oliphant, Morris C. Allen and George E. Failing.

Sun Oil Co., Philadelphia, Pa.; booths 6-7. In charge: A. M. Ballard, A. F. Maxson, C. P. Rosenberger, C. E. Holt and C. A. Fitzgerrell.

The Strong Oil Tool Co., Los Angeles, Calif.; booth 32, exhibiting gas lift packers. In charge: Andrew M. Strong.

The Texas Company, Houston, Tex.; booths 17-18, exhibiting Texaco products. In charge: V. W. Logue, A. Lefevre, Jr., and Claude Kitchen.

Tim Cushing Tool & Supply Co., Bristow, Okla.; booth 26, exhibiting bottom hole plug. In charge: Tim Cushing.

Trumble Gas Trap Co., Los Angeles, Calif.; booths 87-88-123-124. In charge: C. F. Camp.

United Carbon Co., Charleston, W. Va.; booths 1-2, exhibiting carbon black. In charge: H. W. Engstrom, general superintendent; Oscar Nelson, president; Curt Swansberg, chemist; C. L. Staats, H. C. Pearson and E. H. Shinn.

Van Leer Spout Co., New York, N. Y.; booth 109, exhibiting seals for cans, barrels, drums, tanks, etc., to prevent substitution. In charge: A. Serson and Mrs. R. M. Stone.

Wagner Electric Corp., St. Louis, Mo.; booth 76, exhibiting totally enclosed motor and transformers. In charge: L. A. Courter, H. H. Hudson and P. Lloyd Lewis.

Ward Chemical Co., Tulsa, Okla.; booth 26, exhibiting chemicals, quick set Sol-Ray compound for fishing. In charge: C. E. Reichard.

Waukesha Motor Co., Waukesha, Wis.; booths 89-90-121-122, exhibiting motors. In charge: A. J. Radelet, M. E. Micklin, J. E. DeLong, oil fuel equipment; H. L. Horning, president; J. B. Fisher, engineer.

Wellsville Fire Brick Co., Wellsville, Mo.; booth one-half of 56, exhibiting flat arch Chico brick, Wellsville Bond cement, Form-o-Trax plastic firebrick, Wellsville Savage and Hi-Heat firebrick. In charge: B. L. Cassady.

West American Rubber Co., Los Angeles, Calif.; booth 115, exhibiting rotary hose rubber specialties. In charge: Harold Riley and Charley Lamb.

Westinghouse Electric & Manufacturing Co., E. Pittsburgh, Pa.; boo h 125, exhibiting electric oil field motors and lighting equipment. In charge: W. F. Barnes, manager, Tulsa; Jack Phillips, Tulsa; Kenneth McLord, Tulsa; D. V. Mann and W. C. Looney, Dallas; J. P. Jordan, East Pittsburgh, Pa.; William Dreyer, East Pittsburgh, Pa., and Graeme Ross, St. Louis, Mo.

Whealton & Townsend, Inc., Los Angeles, Calif., lot "J," exhibiting engines (gas and full Diesel), compressors (vertical two stage, tamden two stage, duplex two stage, vertical single stage), portable compressors, pneumagic tools, rock drills, electric tools and Crane packing. In charge: L. F. Smith, Crane Packing Co., and J. Langford, Wheatton & Townsend, Inc.

Whitney Metal Tool Co., Rockford, Ill.; booth 66, exhibiting ball-bearing punches and shears. In charge: John Jensen, general manager, and Gus Jensen, sales department.

William Powell Valve Co., Cincinnati, Ohio; booths 126-127, exhibiting valves. In charge; Bob Allen, A. K. Birch, A. T. Crump and James Comb, vice president.

E. B. Wiggins, Los Angeles, booth 117, exhibiting rotary underreamers. In charge: Earl W. Bilger and E. B. Wiggins.

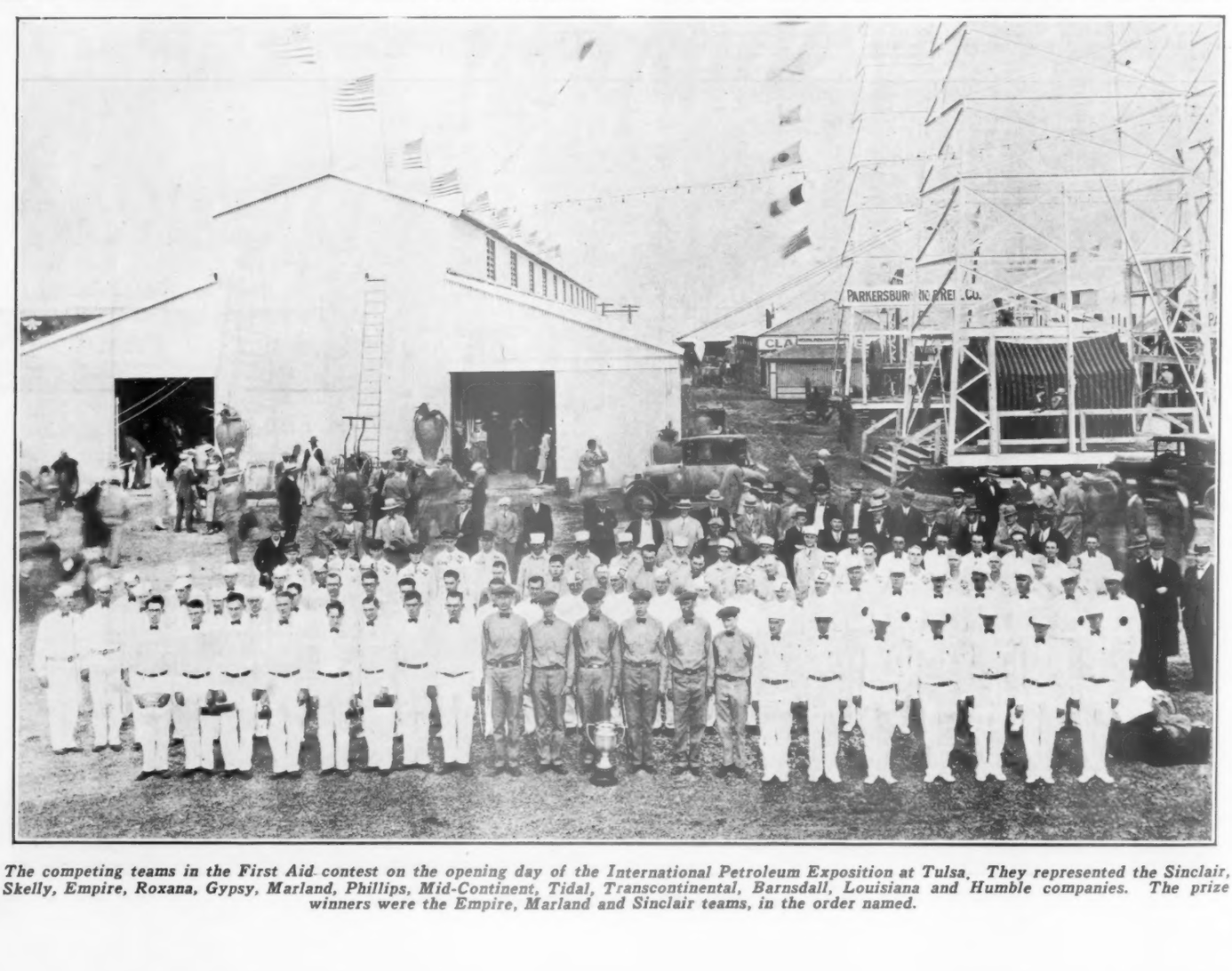
Zero Hour Torpedo Co., Tulsa, Okla.; booth 31, exhibiting electric time bomb. In charge: W. J. Cheley, Warren Bleecher, Harry Jenkins and Bert McCall.

Texas Building

Allan, George B., & Co., Dallas, Tex.; booth 124, exhibiting Tuthill typhoon pumps, Campbell boiler feed water regulator, Armstrong steam trap, Mosher separators, and Cadman valves. In charge: George B. Allan, and E. J. Markvart.

American Chain Co., Bridgeport, Conn.; exhibiting Page jacks and Acco jacks. In charge: H. R. Leland and F. B. Carr.

American Brass Co., Chicago, Ill.; booths



The competing teams in the First Aid contest on the opening day of the International Petroleum Exposition at Tulsa. They represented the Sinclair, Skelly, Empire, Roxana, Gypsy, Marland, Phillips, Mid-Continent, Tidal, Transcontinental, Barnsdall, Louisiana and Humble companies. The prize winners were the Empire, Marland and Sinclair teams, in the order named.

63-64, exhibiting welding wire. In charge: J. W. Kennedy.

Andrews Steel Co., Newport, Ky.; booth 69, exhibiting bit and jar steel and special steels. In charge: Harry Walker, W. R. Fleming and A. W. Hubbard.

Armstrong Machine Co., Three Rivers, Mich.; booths 124-125, exhibiting Armstrong steam traps—a glass trap in operation. In charge: O. E. Ulrich, Three Rivers, Mich.; G. B. Allen, Dallas, Tex., distributor.

Atkins, E. C., & Co., Indianapolis, Ind.; booth 93, exhibiting load binders. In charge: Fred Medlin, H. R. Leland and Frank Carr.

Automatic Electric, Inc., Chicago; booth 104, exhibiting automatic telephone equipment and Strowger fire alarm system. In charge: W. H. Walter, Hugh McIndue, and O. E. Ragsdale.

Baird Tool Works, Inc., Tulsa, Okla.; booth 14, exhibiting Baird pumping valves, Leonard sucker rod sockets, and Spivey sand traps. In charge: L. D. Baird, J. E. Moss, and L. B. Durbin.

Barco Manufacturing Co., Chicago, Ill.; booth 88, exhibiting lubricated plug valves, and flexible ball joints. In charge: L. E. Livingston, and H. P. MacGregor.

Barrett Machine Co., Pittsburgh, Pa.; booth 124, exhibiting Mosher separator, Cadman indestructible blow-off valve, and Cadman gaso valves. In charge: George B. Allan, Dallas, Tex.; and C. S. Krafft, Dallas, Tex.

Billings & Spencer, Fort Worth, Tex.; booth 83, exhibiting forged tools. In charge: H. C. Gardner.

Bovaird Supply Co., Tulsa, Okla.; booths 25, 26, 27, 28 and 29; exhibiting Bovaird grip elevators and spiders, Etna tubular products, Hazard wire line, Leidecker spiral bits. In charge: W. M. Bovaird, F. D. Bovaird, D. D. Bovaird and George Krell.

Braden Steel & Winch Co., Tulsa, Okla.; booths 132 and 133, exhibiting winch. In charge: T. J. Shuetz, R. H. Cowan, H. B. Cook, M. V. Fike and B. S. Scott.

Bristol Company, The, Waterbury, Conn.; booth 84, exhibiting recording instruments and automatic control apparatus. In charge: S. W. Case.

Burt Corp., Tulsa, Okla.; booth 5, exhibiting swab. In charge: L. G. Burt, John Bateman, Frace Shay and John J. Dailey.

Chicago Bridge & Iron Works, Chicago, Ill.; booth 2, exhibiting Wiggins breather roof and Wiggins floating roof. In charge: H. B. Murphey, J. R. Donaldson and T. H. Wiggins.

Cleveland Pneumatic Tool Co., Cleveland, Ohio; booth 93, exhibiting Gruss air springs. In charge: Fred Medlin, H. R. Leland and Frank Carr.

Columbian Steel Tank Co., Kansas City, Mo.; booth 93, exhibiting truck tanks and carrying cans. In charge H. R. Leland, Fred Medlin and Frank Carr.

Detroit Hoist & Machine Co.; booths 25 and 29, exhibits represented by Bovaird.

L. E. Dickson, Breckenridge, Tex.; booth 1, exhibiting Dickson grabs, Dickson tubing tong and Dickson wire line twister. In charge: L. E. Dickson and J. R. Pray.

Duff Manufacturing Co., Pittsburgh, Pa.; booth 83, exhibiting jacks. In charge: H. C. Gardner.

Dunn Manufacturing Co., Oxnard, Calif.; booths 91-120, exhibiting patented drilling and production tools. In charge: N. K. Smith, E. F. Goggins, C. R. Worley, Z. S. Mellon, E. F. Austin, R. T. Todd, and Marshall Moore.

Eagle-Picher Lead Co., Chicago, Ill.; booths 59 and 60. In charge: T. C. Carter, Williard Maston, Arthur Stanton, F. W. C. Bailey, E. G. Hollman, W. J. McGee and H. R. Shidel.

Eckenrolls Valve Manufacturing Co., Philadelphia, Pa.; booth 124, exhibiting automatic reseating blow-off valves. In charge: George B. Allan, and C. S. Krafft.

Economy Pump Co., Tulsa, Okla.; booth 21, exhibiting Economy liner barrel pumps. In charge: George A. Gage and R. L. Dunkle.

Equipment Manufacturing Co., Tulsa, Okla.; booth 15, exhibiting oil saver, polish rod clamp. In charge: W. F. Dodson.

Federal Malleable Co., West Allis, Wis.; booths 6 and 7, exhibiting certified malleable castings. In charge: Kurt Siemens.

Federal Supply Co., Tulsa, Okla.; booth 128, exhibiting Federal belt stretcher, Federal belt clamp, Trapsocket, rod guides and casing spears. In charge: A. B. Ryan, S. B. Barnes.

Federal Malleable Co., West Allis, Wis.; booths 6 and 7, exhibiting malleable castings, semifinished and nickle plated. In charge: Kurt Z. Siemens.

Fisher Governor Co., Marshalltown, Iowa; booths 102-109, exhibiting regulators and liquid controls. In charge: T. J. Laney, Marshalltown, Iowa; and R. L. Armitage, Tulsa, Okla.

Foamite-Childs Corp., Utica, N. Y.; booth 95, exhibiting Foamite foam generator system for extinguishing tank fires and Foamite portable equipment. In charge: F. S. Steinicke, A. E. Canaday and H. P. Maginniss.

Garlock Packing Co., Palmyra, N. Y.; booth 30, exhibiting packing. In charge: F. E. Erlandson, district manager, St. Louis, Mo.; W. A. Redd, Jr., district manager, Birmingham, Ala.; T. F. Foley, district manager, Tulsa, Okla.; and H. A. Oraeger, district manager, Tulsa, Okla.

Gaso Pump & Burner Co., Tulsa, Okla.; booths 82 and 129, exhibiting Gaso pumps.

General Electric Co., Schenectady, N. Y.; booths 76-134-135, exhibiting oil well motors with control, arc welding set and photographs of oil field installations. In charge: L. T. Blaisdell, R. T. Shields, C. C. Allert, N. M. Wilkinson, E. F. Patterson, R. L. Middle.on, A. L. Jones, William A. Gleusing, George Anderson, J. M. Connors, J. P. Jones, W. G. Taylor and A. W. Sherwood.

Gilbert & Barker Manufacturing Co., Springfield, Mass.; booth 17, exhibiting gasoline curb pump and Nultra cylinder. In charge: F. R. Fraser, J. P. Clark, E. F. Blackburn and F. D. Bostwick.

Hazard Manufacturing Co., Wilkes-Barre, Pa.; booths 25-29, exhibiting equipment represented by Bovaird.

Heeter, C. M., Sons & Co., Inc., Butler, Pa.; booth 9, exhibiting oil and gas well appliances. In charge: C. M. Heeter, and F. Charles Shugart.

Highland Body Manufacturing Co., Cincinnati, Ohio; booths 55-94, exhibiting automobile bodies.

Highway Trailer Co., Edgerton, Wis.; booths 67-68.

Hill, Hubbell & Co., Tulsa, Okla.; booths 38-39, exhibiting paint. In charge: R. H. Hubbell, G. G. Langan, E. R. McCarthy, Fred Devinney, K. H. Burton, J. J. King, and H. W. Hathcock.

Hinderliter Tool Co., Tulsa, Okla.; booths 22-23-24, exhibiting drilling and fishing tools. In charge: Clarence Watson, Harry Crotty, Clyde Frazier, and George Justice.

Hobbs Manufacturing Co., Fort Worth, Tex.; booth 93, exhibiting hand winches. In charge: F. B. Carr and H. R. Leland.

Hudson Wire & Iron Co., Tulsa, Okla.; booth 32, exhibiting wire and iron. In charge: P. E. Hudson, R. E. McChesney, and Frank Hudson.

Hurley Gasoline Co., Tulsa, Okla.; booths 98-113, exhibiting glass model of absorber. In charge: J. E. Kobernik, A. F. Clarke, and J. W. Hurley.

Hydraulic Press Manufacturing Co., Mount Gilead, Ohio; booths 96-97, exhibiting Forgsteel fittings. In charge: L. Kennedy, and W. E. Foster.

Illinois Engineering Co., Chicago, Ill.; booth 51, exhibiting steam power plant specialties. In charge: J. L. Ehretsman, factory branch; Jack Wheeler, Oklahoma representative, and M. N. Dannenbaum, Houston, Tex., representative.

Imperial Brass Manufacturing Co., Chicago, Ill.; booths 63-64, exhibiting acetylene generators. In charge: Mr. Harter.

Iverson Tool Co., Tulsa, Okla.; booth 18, exhibiting oil well drilling and fishing tools. In charge: P. M. Iverson, and R. Maines.

Kennedye-Plumbing Corp., St. Louis, Mo.; booth 20, exhibiting K-P straight hole bit, and plumb tools. In charge: C. B. Kennedye, H. C. Evans, A. W. Short, and C. P. Bascum.

Kemper-Thomas Co., Cincinnati, Ohio; booth 8, exhibiting advertising specialties, calendars, cloth goods and leather; the Barker patented weatherproof sign. In charge: C. H. Weier.

Larkin & Co., Butler, Pa.; booth 34, exhibiting Larkin improved sand pumps, Larkin automatic oil savers, Larkin never-slip pipe grips and Larkin nationally used packers. In charge: J. B. Murrin, and W. H. Larkin, Jr.

Leland Truck & Equipment Co., Tulsa, Okla.; booths 53 and 93.

Leidecker Tool Co., Marietta, Ohio; booths 25-29, represented by Bovaird.

Linde Air Products Co., New York, N. Y.; booths 114-5-6-7-8, exhibiting welding equipment, oxygen, carbide, Prest-O-Lite, and Haynes Stellite. In charge: R. W. Boggs, L. B. Moon, A. L. O'Connell, L. D. Burnett, A. C. Johnson, and W. S. Tromley.

Mack International Motor Truck Co., New York City; booths 7, 72 and 73.

Magneto Ignition Corp., Tulsa, Okla.; booths 65-66, exhibiting ignition equipment and speedy magnetos. In charge: R. E. Day, and McElworthy.

Maloney Tank Manufacturing Co., Tulsa, Okla.; booth 85, exhibiting miscellaneous equipment. In charge: J. S. Warren, R. A. Maloney, and George E. Osborne—Lamson & Sessions Co., Cleveland, Ohio.

Merco-Nordstrom Valve Co., New Orleans, La.; booth 107, exhibiting Merco-Nordstrom lubricated stop plug valves. In charge: T. H. Campbell, and B. V. Emery.

Miller Combination Bailer & Pump, Sapulpa, Okla.; booth 57, exhibiting Miller combination bailer and pump. In charge: G. W. Miller, C. C. Newton, E. B. de Low, and Fill Lenhard.

Mine Safety Appliance Co., Pittsburgh, Pa.; booth 86, exhibiting safety appliances. In charge: E. H. Kellogg, and H. W. Richards.

Mission Sales Co., Houston, Tex.; booth 4, exhibiting Kibele piston, swabs and valve seat puller. In charge: Ralph Kerr.

Modern Engineering Co., St. Louis, Mo.; booth 63-74, exhibiting welders supplies. In charge: J. W. Kennedy and C. B. Horter.

National Brake & Electric Co., Milwaukee, Wis.; booths 126-127, exhibiting 110 cubic foot portable gas-engine driven air compressor also sleeve valve direct connected electric motor driven air compressors for service and filling stations, complete with ½-H.p., ¾-H.p., and 3-H.p. motors and automatic start and stop control. In charge: M. H. Burchard, vice president; and A. M. Poole, representative.

National Carbide Sales Corp., New York; booths 63-64, exhibiting calcium carbide. In charge: E. C. Ackerman.

National Meter Co., Chicago, Ill.; booth 123, exhibiting oil meters for various service and conditions. In charge: John E. Hosier, Chicago, Ill.

National Tank Co., Tulsa, Okla.; booths 99-112, exhibiting National separators and welded tanks; equipment. In charge: Jay P. Walker, and C. G. Wells.

National Turnbuckle Derrick Co., Tulsa, Okla.; booths 89-90-121-122, exhibiting National Turnbuckle derricks, National tubular steel derrick and Besse sand reel supports. In charge: Mrs. Cole, Mrs. Richardson, Miss Clare Nelson, Frank M. Mahan, H. D. Wilmoth, and Carl H. Besse.

Newton Process Manufacturing Co., Fullerton, Calif.; booths 98-113, exhibiting Newton process. In charge: A. F. Clarke, J. E. Kobernick, and J. W. Hurley.

Neumeyer, A. E., & Son, Tulsa, Okla.; booth 55.

Nixdorf Krein Manufacturing Co., St. Louis, Mo.; booth 93, exhibiting steel load chain, one-quarter to 1-inch. In charge: F. B. Carr, H. R. Leland, and Fred Medlin.

Northern Pump Co., Minneapolis, Minn; booths 102-109. In charge: R. L. Armitage, Tulsa, Okla.

Northwestern Manufacturing Co., Milwaukee, Wis.; booths 44-45; exhibiting arc welding sets.

Norval & Dial, Inc., Tulsa, Okla.; booths 78-79-80-81, exhibiting Dodge motor cars and Graham trucks. In charge: Lyman Brown, and J. C. Webb.

Oakite Products, Inc., New York; booths 61-62, exhibiting cleaning materials. In charge: V. D. Smith, G. M. Seib, A. J. Ospring, and J. F. Arnold.

Walter O'Bannon Co., Tulsa, Okla.; booth 103, exhibiting safety sucker rod elevators, hooks, links, safety tubing hooks and spiders, liner barrels, rod sockets and hinged bell nipples. In charge: Walter O'Bannon, Charles Bloom, L. K. Gerkey, R. R. Wynne, E. D. May, and E. P. Oldham.

Ohio Steel Foundry, Springfield, Ohio; booth 35, exhibiting return bends, fittings and Fahrite. In charge: E. K. Pierce, W. J. Hayes, and W. J. Gilmore.

Oil City Iron Works, Shreveport, La.; booth 4, exhibiting perfection core barrel for rotary drilling. In charge: W. Olin Price, and Clem S. Clarke.

Oil Well Improvements, Tulsa, Okla.; booth 87, exhibiting control casing heads, oil savers, stuffing boxes, job castings and machine work. In charge: C. O. Heggem, Jr., and Robert Lee.

Oklahoma Rig & Supply, Muskogee, Okla.; booth 56, exhibiting handles, gauge rods, pipe jacks, wire line dividers. In charge: Sim D. Slaughter.

Oklahoma Steel Castings, Tulsa, Okla.; booths 46-47, exhibiting steel castings. In charge: S. J. Moore, and E. M. Newland.

Permutit Co., The, New York City; booth 74, exhibiting Zeolite water softener. In charge: B. T. Delafield.

Peerless Supply Co., Tulsa, Okla.; booth 13, exhibiting McKissick safety tubing and casing blocks, Peerless floating type stuffing boxes, Peerless bronze sucker rod guides, McKissick tubing bleeder, sand trap and standing valve combination. In charge: E. G. Blaylock, W. H. McKissick, E. A. Shaw, G. A. Scott, and W. D. McKinley.

Pittsburgh Equitable Meter Co., Pittsburgh, Pa.; booth 75, exhibiting volume controller for air-gas lift, meters and regulators for gas meters for gasoline, oil and water. In charge: A. J. Kerr, D. A. Gardner, and F. A. Arnesen.

Power Plant Equipment Co., Kansas City, Mo.; booth 50, exhibiting steam super heater, steam purifier, and spray cooling equipment. In charge: L. T. Mart.

Prairie Oil & Gas Co., Independence, Kans.; booths 100-101-110-111. In charge: H. L. Morris, W. S. Fitzpatrick, N. K. Moody, and Dana H. Kelsey.

Purox Company, Denver, Colo.; booths 44-45, exhibiting welding apparatus.

Pyle-National Co., Chicago; booths 42-43, exhibiting generators, both steam and gas, floodlights and Oliver products of fitting. In charge: C. T. Tewkesbury and Alex E. Johnson.

Quigley Furnace Specialties Co., New York; booths 11-12, exhibiting working demonstrations of "Hytempite" high temperature cement; triple A solutions and Quigley refractory guns; three motion picture machines showing Quigley products in actual use. In charge: W. H. Gaylor, Jr., vice president, and Harrison W. Wood.

Reading Steel Casting Co., Bridgeport, Conn.; booths 96-97, exhibiting cast steel valves, iron and brass valves, steel fittings. In charge: L. Kennedy, and W. E. Foster.

Reading Iron Co., Reading Pa.; booth 10, exhibiting genuine wrought iron pipe. In charge: A. M. Cullum, N. R. Putnam, and A. C. Milliken.

Reed Air Filter Co., Louisville, Ky.; booths 102-109, exhibiting Reed air filters, handled by Smith Separator Co.

Reid-Avery Co., Philadelphia, Pa.; booths 63-64, exhibiting welding wire. In charge: J. W. Kennedy, and C. B. Horter.

Ridge Tool Co., Elyria, Ohio; booth 16, exhibiting Ridgid tools, pipe wrenches, vises, cutters. In charge: T. Gordon Scott, and R. C. Chamberlain.

Selden Sales & Service Co.; booths 53-54-55, exhibiting heavy duty motor truck Model 60, special road master. In charge: C. V. Reser, and S. A. Bodine.

Selden Sales & Service Co., Tulsa, Okla.; booths 92-93-94.

Simplex Wire & Cable Co., Chicago; booths 63-64, exhibiting rubber covered cables.

Sivyer Steel Castings Co., Milwaukee, Wis.; booths 6 and 7, exhibiting alloy steel casting. In charge: A. H. Oberndorfer, L. S. Peregoy and M. A. Fladoes.

Sivyer Steel Co., Milwaukee, Wis.; booths 6-7, exhibiting steel castings for oil field equipment, rough and finished. in charge: A. H. Obendorfer, advertising manager, and M. A. Fladoes, sales manager.

Skinner Brothers Belting Co., Tulsa, Okla.; booth 58, exhibiting oil saver, stuffing boxes, control heads, rod hooks and elevators. In charge: P. B. Skinner, R. W. Skinner, and B. F. Hoffman.

Smith Separator Co., Tulsa, Okla.; booths 102-109, exhibiting Smith separator, Victaulic coupling, Ever-Ready protector, Reed air filter. In charge: L. F. Waters, and James Morgan.

Sonner, P. J., Gas Burner Co., Winfield, Kans.; booth 119, exhibiting gas burner. In charge: M. A. Bangs, P. J. Sonner, V. S. Beck, Newton Barrett, and Max Stocking.

Spang, Chalfant & Co., Inc., Pittsburgh, Pa.; booths 25-29, by Bovaird.

Spang & Co., Butler, Pa.; booth 108, exhibiting Spang weldess jars. In charge: F. J. Spang, C. E. Spang, J. E. Rumpf, V. A. Smith, E. B. Irvan, A. E. Liddlerdale, and L. F. Porter.

Spencer Trailer Co., Augusta, Kans.; booth 92, exhibiting Model H 5-ton pole trailers. In charge: H. R. Leland, Fred Spencer, and F. B. Carr.

Stearns Roger Manufacturing Co., Denver, Colo.; booth 31, exhibiting Urbco bit, hollow bit, clean out tool and kickoff valve. In charge: George B. Richie, Louis Weiss, and C. L. Dean.

Stacey, E. C., Tiffin, Ohio; booth 93, exhibiting load binders and parts. In charge: H. R. Leland, Fred Medlin, and F. B. Carr.

Stanley Belting Co., Chicago; booth 33, exhibiting Stanley solid woven belting. In charge: James T. Sullivan, W. R. Tucker, and C. E. Hathaway.

Stoody Products Sales Co., Tulsa, Okla.; booths 44-45, exhibiting Stoody products, Purox welding apparatus, Hansen arc welding equipment. In charge: R. W. Willis, William Grand, M. C. Willis, and C. Shepard.

Surface Equipment Co., Tulsa, Okla.; booth 15, exhibiting surface equipment. In charge: W. F. Dodson.

Templeton, Kenley & Co., Chicago; booth 19, exhibiting Simplex jacks. In charge: H. B. Burlow, and W. H. Kreer.

Timken Roller Bearing Co., Canton, Ohio; booths 130-131, exhibiting tapered roller bearings. In charge: L. M. Klinedinst, H. I. Barth, J. L. Young, R. P. Proffitt, and J. M. Carey.

Trailmobile Company, Cincinnati, Ohio; booth 93, exhibiting motion pictures of semi and 4-wheel trailers. In charge: Fred Medlin, F. B. Carr, and H. R. Leland.

Tuthill Pump Co., Chicago; booth 124, exhibiting 300-gallon motor-driven pump and small rotary positive displacement pump. In charge: George B. Allen, C. S. Krafft, and E. J. Markvart.

United Iron Works, Tulsa, Okla.; booths 48-49, exhibiting oil field equipment. In charge: W. E. Brown, W. A. Green, I. H. Winsor, and S. C. Muratta.

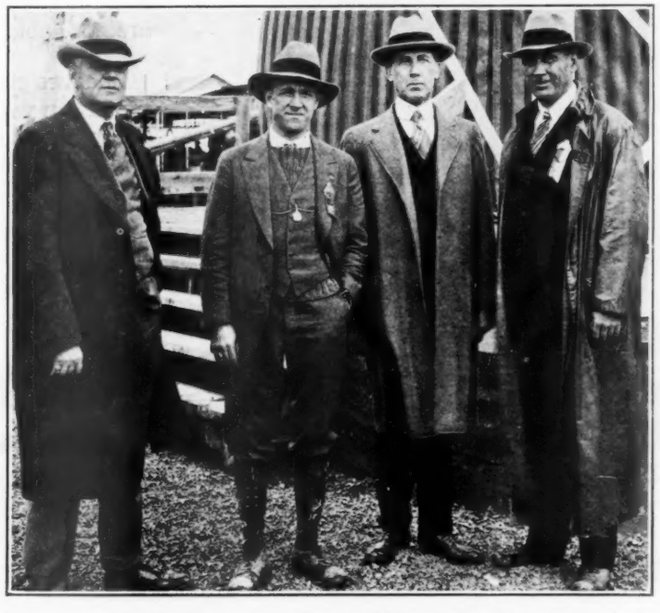
U. S. Gauge Co., New York; booths 63-64, exhibiting gauges. In charge: C. B. Horter, and J. W. Kennedy.

U. S. Light & Heat Corp., Niagara Falls, N. Y.; booths 63-64, exhibiting electric welding machines. In charge: C. B. Horter, and J. W. Kennedy.

Victaulic Co. of America, New York; booths 102-109, exhibiting victaulic couplings. In charge: Jim Gibbons.

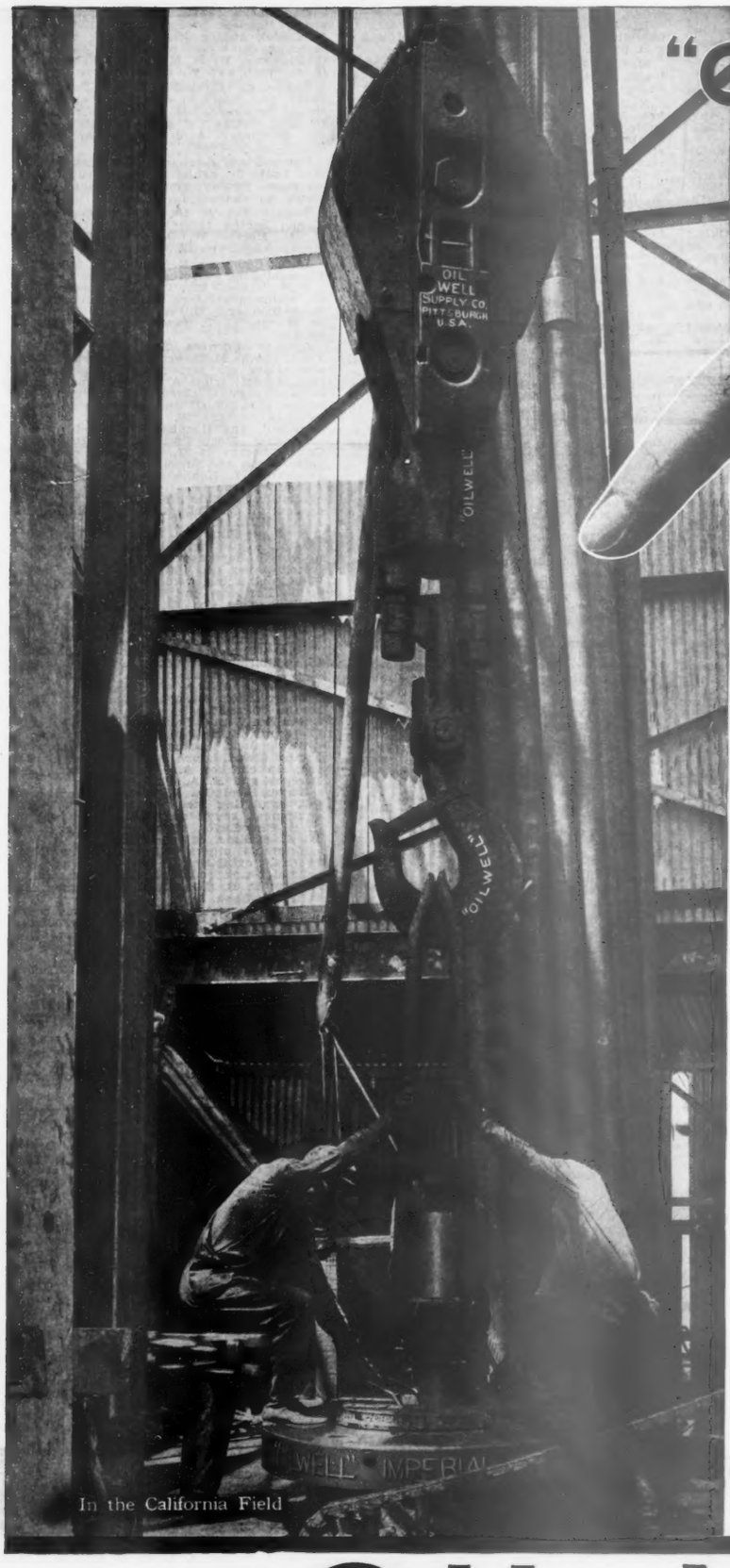
Viking Pump Co., Cedar Falls, Iowa; booth 103, exhibiting Viking pumps. In charge:

NOTABLES AT BIG OIL SHOW



Congressman E. B. Howard; J. Burr Gibbons, general manager of the Exposition; Henry Johnston, Governor of Oklahoma, and Alf G. Heggem, president Tulsa Chamber of Commerce.

"OILWELL" SPRING T



In the California Field

The photograph to the left shows the block relieved of the load.

"OILWELL" Spring Travelling Blocks eliminate the necessity of a spring hook as there is a spring attachment in the lower clevis.

They have two springs which give better spring action. Though large in size and extremely powerful, they are shorter over-all when equipped with any common casing hook than a regular travelling block with a spring casing hook.

The large center pin is drilled so that each sheave is lubricated independently. Lubrication is by means of the Alemite System and an Alemite gun is furnished with each block. Alemite connections are so located that they are not liable to damage.

Sheaves can be removed by pulling out the center pin without dismantling any other part of the blocks except removing the guards on blocks so equipped.

"OILWELL" ESTD. 1862 TRADE MARK (REGISTERED)

Inquire at any of our

OIL WELL SU

WORLD'S OLDEST AND LARGEST MANUFACTURERS OF OIL FIELD EQU

ING TRAVELLING BLOCKS
(PATENTED)

The photograph to the right shows the block with springs under compression carrying the load.

The side plates carry heavy steel side bars which not only strengthen the blocks but also prevent the blocks from getting caught in the derrick.

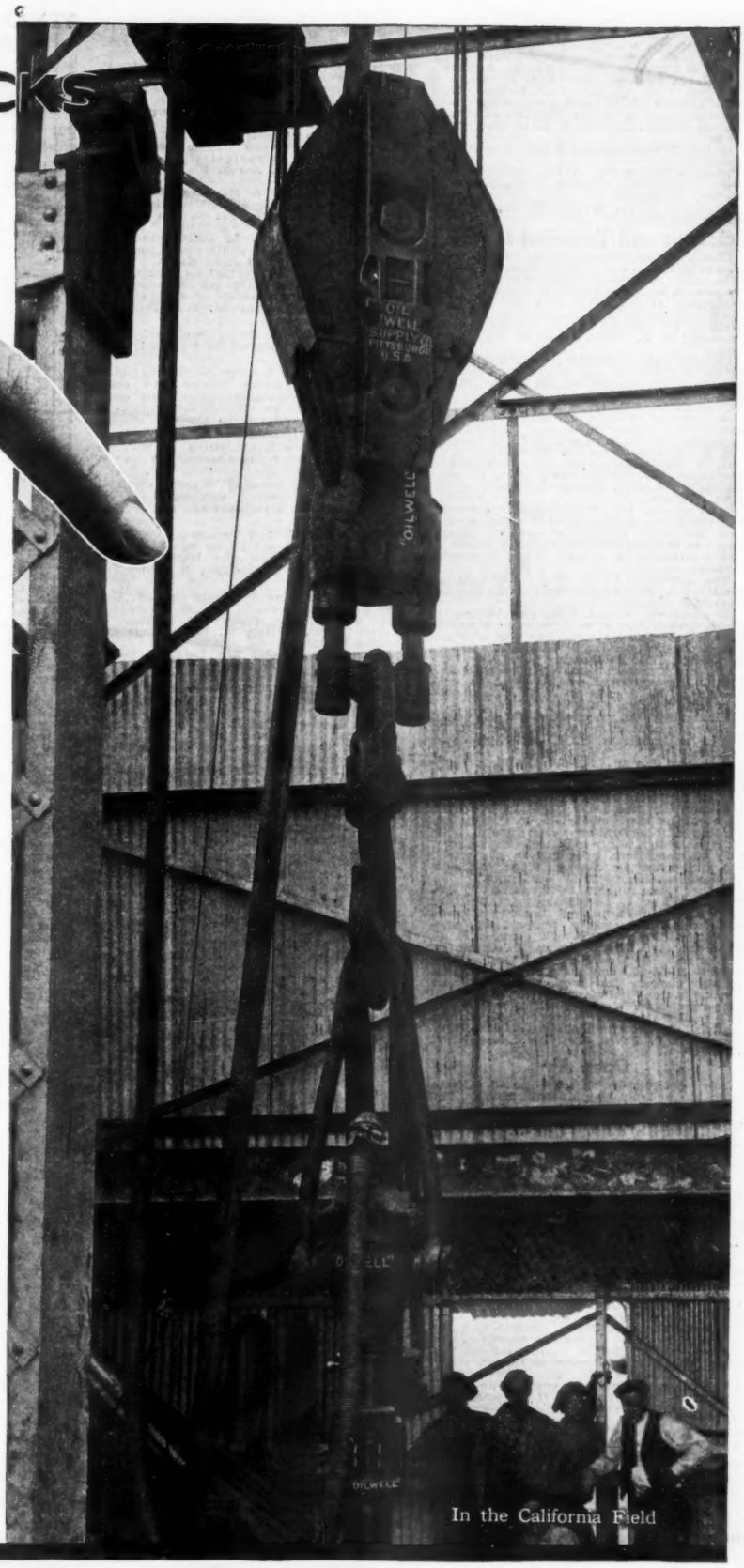
Made in two sizes—25¼-inch shell with 6-inch center pin and 30-inch diameter sheaves (length over-all 7 feet), and 66-inch shell with 6-inch center pin and 31¼-inch diameter sheaves (length over-all 9 feet, 4 inches). Sheave diameters are measured at bottom of groove.

The 66-inch block is so constructed that the spring attachment can be swung over to the side and the block stood on end when stringing the lines.

Both sizes are furnished with roller bearings. The roller bearings operate in high grade heat treated steel races and the lubricant is retained in the bearings.

Can be furnished with triple, quadruple or quintuple sheaves, and either with or without guards. Can also be furnished without spring attachment, if desired.

"OILWELL" ESTD 1862 TRADE MARK REGISTERED



In the California Field

of our 100 Branches

SUPPLY CO.

LD EQUIPMENT BRANCH STORES IN ALL OIL FIELDS

Walter O'Bannon, Charles Bloom, L. K. Gerkey, and E. P. Oldham.

Vogt, Henry, Machine Co., Louisville, Ky.; booths 36-37, exhibiting drop forged steel valves and fittings. In charge: W. A. Jackman, L. D. Schlegel, and G. A. Heuser.

Vulcan Soot Cleaner Co., Dubois, Pa.; booth 124, exhibiting ratchet operat ng head, valve operating head, and Vulcan soot cleaners. In charge: George B. Allan, and C. S. Krafft.

Wailes Dove-Hermiston Corp., New York; booth 70.

Welders Supply Co., Tulsa, Okla.; booths 63-64, exhib.ting welding equipment. In charge: J. Harder.

Williams, J. H., & Co., Buffalo, N. Y.; booths 105-106.

Scientific and Technical Building

Brown Instrument Co., Tulsa, Okla.; booth 37, exhibiting new fo.low-up throttling type automatic pyrometer tempera ure control for towers, and still furnaces, recording and indicating electric inductive bridge flow meters, CO_2 meters, pyrometers and pressure gauges. In charge: F. M. Poole, district manager; G. S. Younkin and R. W. Groendycke.

Chaplin Fulton Manufacturing Co., Pittsburgh, Pa.; boo h 40, exhibiting pressure regulators for gas and oil. In charge: W. S. Ralston and J. P. Kelly.

Crosby Steam Gauge & Valve Co., Boston, Mass.; booths 39-55-56, exhibiting indicat.ng gauges, pop safety valves and relief valves. In charge: J. H. Satterwhite, F. I. Thompson, M. E. O'Melia and G. B. Smith.

G. M. Davis Regulator Co., Chicago, Ill.; booths 39-55-56, exhibiting G. M. Davis regulator. In charge, George C. Davis, president, Chicago.

Foxboro Co., Inc., Foxboro, Mass.; booths 5-6, exhibi.ing new style orifice meter, volume controller for air or gas lift, gauge board of temperature and pressure recorders and controllers. In charge: Willis C. Brown, manager.

The Howards, Tulsa, Okla.; booth 7, exhibiting commercial photography. In charge: George O. Howard.

Metric Metal Works, Erie, Pa.; booths 39-55-56, exhibiting metric meters, Westcott orifice meters and me.ric flow control regulators. In charge: J. C. Diehl, J. H. Satterwh.te and F. I. Thompson.

Oklahoma Natural Gas Co., Tulsa, Okla.; booth 31, exhibiting scientific equipment. In charge, H. Vernon, E. H. Clark and Gilbert Estell, Tulsa, Okla.

Rectigraph Co., Rochester, N. Y.; booth 32, exhibiting Rectigraph. In charge: E. W. Hamil.on, Rochester, N. Y., and F. A. Yates, Atlanta, Ga.

Refinery Supply Co., Tulsa, Okla.; booth 8, exhibiting oil and gas equipment. In charge, W. H. Schlueter and J. Okeson.

C. J. Tagliabue Manufacturing Co., Brooklyn, N. Y.; booths 3-4, exhibiting oil testing instruments, instruments for indicating, recording and controlling temperature, pressure, humidi.y, etc.; industrial and laboratory thermometers, hydrometers, gas analyses apparatus. In charge: R. M. Wilhelm, H. Jungemann and C. F. Huffmann.

Taylor Instrument Companies, Tulsa, Okla.; booths 33-34, exhibiting indicating, recording and regulating, instruments and equipmen. for pressure, temperature, vacuum, density and time. In charge: E. H. Triphaus, S. S. Amdursky and L. G. Marsh.

Westcott & Mapes, Inc., Tulsa, Okla.; booths 39-55-56, exhibiting metric meters, Crosby gauges, Davis regulators, Mar in-Loomis weight indicator, metric direct volume regulators, Westcott orifice meters and Jat gastributors. In charge: J. H. Satterwhite, F. J. Thompson, W. E. O'Meilia, E. W. Jordan, J. C. Davis, J. C. Diehl and W. R. Martin.

Open Air

Advance-Rumely Thresher Co., La Porte, Ind.; booths 1-2-3, exhibiting Rumely Oil Pull tractor and stationary engine. In charge: J. E. Cooper, Fred E. Cooper, A. G. Bailey, W. A. Thomas, Harry Vance, A. C. Frampton and Jack Livingston.

H. H. Breene Oil Field, Inc., Tulsa, Okla.; lot "B NW," exhibiting Breene casing puller, Breene dump bailer, water dump, spudding shoe. In charge: H. H. Breene and Robert Galbreatt, Jr.

Bessemer Gas Engine Co., Tulsa, Okla.; lot EW, exhibiting gas engines, Diesel drilling engines and gas economizers. In charge: John McCune, Jr., secretary; H. C. Pollock, vice president; V. L. Putter, local manager; E. W. Jorden, C. D. Howard, H. D. Stolz, C. R. Hartman and M. L. Vogan.

Buckeye Traction Ditcher Co., Findlay, Ohio; lot H, exhibiting trenching equipment. In charge: J. B. Simmons, V. P. Woolley and D. C. Royce, general manager.

Butler Portable Steam Hammer Co., Okmulgee, Okla.; lot M, exhibiting drilling tools. In charge: Charles A. Bu ler.

C. & G. Cooper Co., Mt. Vernon, Ohio; lot FW, exhibiting gas engines and compressors. In charge: F. H. Thomas, vice president; H. A. Gehres, chemical engineer; T. F. Hudgins, S. E. Johnson, Zeno Taylor, W. C. Kohel, L. F. Williams and Carl Mahaffey.

Caterpillar Tractor Co., Peoria, Ill.; lot GE, exhibiting standard tractors, two-ton 30 and 60. In charge: Jack Crumbaugh, H. Thomas and Walter Ainsley.

H. W. Cardwell Co., Wichita, Kans.; lot L, exhibiting caterpillar, six-speed, two reverse. In charge: Lee Keltner and Jack Greenart.

Crane Packing Co., Chicago, Ill.; lot J, exhibiting miscellaneous packing.

Chicago Pneumatic Tool Co., New York; Lot J, exhibiting compressors. In charge: F. W. Jackson and Whealton Townsend, Inc.

Close-to-Nature Co., Colfax, Iowa; lot C, exhibiting portable buildings. In charge: Paul Monroe and W. A. Stribling.

Creeper Wheel Co., Reading, Pa.; lot E, east end, exhibi.ing traction equipment and creeper wheels. In charge: N. J. Troutman and J. Turner Moore.

Coleman Motors Corp., Littleton, Colo.; lot K, SW, exhibiting light and heavy motor trucks, four-wheel drive; oil field trailers and tank wagons. In charge: George Reynolds, H. R. Holmes, George Coleman, E. R. Holmes, A. V. Harris, E. D. Candler, Floyd Trout and R. R. Celien.

Clark Brothers Co., Tulsa Okla.; lot "A," exhibiting 120-h.p. drilling engine, 100-h.p. vertical compressor, 40-h.p. pumping engine, 90-h.p. horizontal compressor. In charge: O. E. Taylor, C. P. Clark, William Cummings, G. W. Probst, D. K. Hutchcraft, P. D. Baker and "Shorty" Orr.

F. M. Crowell Co., Tulsa, Okla.; lot "B," exhibiting Master Jack Crowell tubing support float valve spray gas burner. In charge: L. A. Vandervoort and F. M. Crowell.

Celotex Co., Chicago, Ill.; booth 29, exhibiting oil tank insulation, building insulation, Acousti-Celotex. In charge: W. S. Wallace, C. L. Burtis, E. R. Nor.h, F. P. Wohlford and P. D. Close.

De So a Foundry & Machine Co., Mansfield, La.; booth 12, exhibiting Law conduit gate valve. In charge: Charles R. Law and William Law.

Eurit, Carl, and J. L. Miller; booth 8, exhibiting Eurit E. Z. shaft connection. In charge: Carl Eurit and J. L. Miller.

Foos Engine Co., Springfield, Ohio, and Tulsa, Okla.; lot H, exhibiting 80 horsepower gas engines, manufacturers of vertical .ype V, two-cylinder. In charge: D. S. Deem, J. A. Teach.

General Woodwork Corp., Cincinnati, Ohio; lot K, exhibiting Ajax oil field special truck cabs.

Gas Engineering & Cons. Co., Tulsa, Okla.; booths 4-5, exhibiting pumps and compressors, Clark Brothers engines and compressors. In charge: W. G. Cummings, D. K. Hutchcraft and George Probst.

Hallibur.on Oil Well Cement.ng Co., Duncan, Okla.; booth 9, exhibiting oil well cementing machinery. In charge, Jay Taylor and G. Campbell.

Hutchison Engineering Works, Chicago, Ill.; booth 6, exhibiting lighting plant. In charge, Frank E. Hutchison and Frank Martin.

Halliburton Oil Well Cementing Co., Duncan, Okla.; lot D, exhibiting Halliburton oil well cementing truck and Halliburton oil well sand tester. In charge: J. Taylor and Gene Campbell.

Hope Engineering & Supply Co., Mt. Vernon, Ohio; lot G, exhibi ing 160 horsepower Hope vertical gas compressor engine. In charge: D. W. McKay, W. B. Jennings and Charles White.

Hopper Winch Co., San Leandro, Calif.; lot M, exhibiting Hopper winch.

International Harvester Co., Chicago, Ill.; lot K, exhibiting McCormick Deering tractor and international trucks. In charge: L. V. Hopkins.

C. W. Kennard and R. A. Pickett, Madison, Kans.; lot F, exhibi.ing P. & K. pumping jack. In charge: C. W. Kennard and R. A. Pickett.

Lufkin Foundry & Machinery Co., Lufkin, Tex.; lot 20 by 45, exhibiting worm-gear pump units and hoists. In charge: W. C. Trout, C. B. Edwards, L. A. Little, E. F. Trout, Charles McLane and W. W. Trout.

Martin Wagon Co., Lufkin, Tex.; lot C, exhibiting high-speed wagon and Martin trailers.

Miller Improved Gas Engine Co., Springfield, Ohio; lot B, exhibiting direc.-driven gas engine compressor unit. In charge: E. A. Watts, W. S. Smith.

North American Tank Car Corp., Tulsa, Okla.; west end of switch, exhibiting tank cars.

W. C. Nabors Co., Mansfield, La.; booth 12, exhibiting trailers. In charge: C. H. Roberts.

Neilson Manufacturing Co., Tulsa, Okla.; booth 10, exhibiting elevators, safety hooks and sucker rod sockets. In charge: L. O. Flud, A. H. Neilson, R. E. Neilson and J. P. Neilson.

Power Manufacturing Co., Marion, Ohio; booth 11, exhibiting Prim oil engines. In charge: Jimmie Hewgley and R. A. Abner.

Rhoades Master Packing Co., Houston, Tex.; booth 17, exhibiting Rhoades master packing. In charge: H. F. Rhoades.

Republic Truck Sales Corp., Alma, Mich.; lot L, southeast 20 by 20, exhibiting motor trucks. In charge: Mr. Williamson.

Southwes.ern Engineering Co., Los Angeles, Calif; lot F, exhibiting gasoline plant equipment: portable gasoline absorption plant, 112-horsepower Collins water tube boiler, 140 degrees gas cooler, light temperature heat exchanger. In charge: R. E. Cimm, R. A. Land, George F. Kelly and Roy Badger.

Star Drilling Machine Co., Chanute, Kans., and Akron, Ohio; lot C, east 30 by 35, exhibi.ing drilling machines, pulling and cleaning out machinery (own power). In charge: A. W. Johnson, W. A. Scott, F. L. Breyfogle and Lewis Breyfogle.

Scientific Research Associa.ion, Tulsa, Okla.; booths 26-27-28, exhibiting auto plain. In charge: Vergil Moore.

Shaffer Specialty Co., Tulsa, Okla.; booth 21, exhibiting Bearcat hoist, S. R. elevators, kickoff valves, liner bearings. In charge: Harry F. Hinish, E. J. Shaffer and G. W. Shaffer.

Wise & Schlegel, Tulsa, Okla.; booth 7, exhibiting oil pumps. In charge: J. B. Wise.

Thrift Corporation, Houston, Tex.; lot F, exhibiting hydraulic casing puller. In charge: Harvey Schmidt, L. A. Pruitt, George Crain.

Titusville Iron Works, Titusville, Pa.; rig display, exhibiting Acme 12 by 12 twin engines, also complete rotary drilling outfi.. In charge: B. F. Kelly and Jack Harrington.

Tulsa Boiler & Machinery Co., Tulsa, Okla.; lot M, exhibiting vapor condensors, accumulator tanks and Tulsa type evaporators.

Union Machine Co., Bartlesville, Okla.; lot M, exhibiting Durnell jacks.

Williamson Motors Corp., Tulsa, Okla.; lot L, exhibiting Republic three-ton .rucks, Fruehauf steel trailors, Linn tractors and Mead-Morrison winches. In charge: C. L. Schneider, D. F. Riggle, Walter Hauser, J. F. Russell and M. M. Williamson.

Worthington Pump & Machinery Co., New York; lot LW, exhibiting direct-connected gas engine gas compressor, forged fluid-end line pumps, enclosed frame gathering pumps and cen rifugal pumps. In charge: H. D. Cornell, J. A. Lupper, W. N. Smith, J. O. Lewis, O. L. Olsen and G. E. Smith.

Young Engine Corp., Can on, Ohio, and Dallas, Tex.; lot L, exhibiting drilling engine. In charge: W. T. Young and H. A. Lawrence.

TEXAS CRUDE STOCKS SHOWING REDUCTION

HOUSTON, Tex., Sept. 26.—Crude stocks in the northern and western districts increased around 2,500,000 bbls., but in the Gulf Coast region drafts on stocks reduced the total stocks.

Stocks of crude oil in storage in the various districts of Texas:

District—	Sept. 1	Aug. 1	Sept. 1, '26
Northern Texas	48,036,264	45,478,795	27,121,657
Southern Texas (steel)	11,112,631	13,102,014	7,780,842
Southern Texas (earthen)	3,792,382	4,273,641	5,664,162
Miscellaneous	6,233,366	6,257,759	6,217,689
Total	69,174,643	69,112,209	46,784,340

Northern District

Texas—	Barrels—Steel	Barrels—Earthen
N. Cent. Texas, including Eastland and Stephens Counties	9,463,262	.....
Burkburnett	1,133,557	.....
Electra	561,065	.....
Petrolia	69,087	.....
Archer County	266,280	.....
Vernon	30,859	.....
Powell	2,267,672	.....
Mexia	9,119,943	.....
Nocona	28,200	.....
Panhandle	18,795,482	.....
West Texas	6,300,857	.....
Total September 1	48,036,264	.....
Total August 1	45,478,795	.....
Increase	2,557,469	.....

Southern District

Boling	36,504	.....
Big Creek	51,115	.....
Damon Mound	14,700	.....
Goose Creek	160,939	178,077
Hull	544,932	150
Humble	1,071,001	1,440,399
Luling	460,705	.....
Lockhart	3,500	.....
Liberty	47,544	.....
Markham	9,350	.....
Orange	201,920	41,485
Pierce Junction	46,942	.....
Sara oga	208,316	.....
Spindletop	5,264,202	175,000
Sour Lake	1,664,453	1,059,800
West Columbia	1,297,986	897,471
Laredo district	1,125,000	.....
Total, September 1	12,209,209	3,792,382
Total, August 1	13,102,014	4,273,641
Decrease	892,805	481,259

Texas—Miscellaneous*

Englewood	1,174,861
Norsworthy	418,000
Sinco	774,476
Webster	1,582,000
Texas City	427,000
Lynchburg	107,372
Baytown	1,334,100
Pasadena	337,062
Crosby	42,162
Almeda	36,332
Total September 1	6,233,366
Total August 1	6,257,759
Decrease	24,393

*Mostly light oils from other sections in the coastal district adjacent to refineries and shipping facilities.

SHREVEPORT MARKETS FEATURING KEROSENE

SHREVEPORT, La., Sept. 26.—The North Louisiana-Arkansas refinery market was featured the past week by efforts of several large buyers including one export company, the Magnolia Petroleum Co., the Standard Oil Co. of Louisiana, and smaller marketers, to purchase kerosene out of this district especially from North Louisiana refiners. In most cases the orders could not be filled to the full extent of the requirements. Approximately 75 cars are known to have been purchased but these buyers still are reported in the market. This situation was sufficient for North Louisiana sellers to maintain a strong 4½-cent price.

The gasoline market continued to hinge on the fact that all refiners are sold up. Some are oversold. The present demand is not heavy but with no material available freely sellers are not taking orders under 6½ cents. The market, however, was not sufficiently strong for sellers to get any more than 6½ cents Monday except in a few cases. Arkansas refiners have been getting 6¾ cents on their intrastate movement.

Gas oil and fuel oil reflected very little change. Inquiries for gas oil for seasonal movement north are coming in at a fair rate with sellers getting from 2¾ to 3 cents on the spot market. Fuel oil was worth $1.10. North Louisiana refiners found some difficulty in obtaining natural gasolines at prices of a week ago. One refiner paid 6½ cents f.o.b. Monroe for Grade C material Monday.

To Hold Conference Of Tax Collectors Columbus, O., Oct. 3

State officials connected with the collection of gasoline taxes and inspection taxes in all parts of the country are expected to attend the North American Gasoline Tax Conference which will be held at Deshler Hotel, Columbus, Ohio, October 3, 4 and 5. Several prepared papers will be presented at the meetings. In addition there will be important committee reports to be acted upon by those in attendance.

The conferences, the first of which was held in St. Louis, Mo., last year, are for the purpose of giving the state officials an opportunity to exchange information relative to the gasoline tax and inspection laws. Frank E. Packard, tax attorney of the Standard Oil Co. of Indiana, Chicago, will address the conference on the subject of "Trend of Gasoline Tax Legislation—Views of the Industry."

Following is the program for the three-day conference:

Monday, October 3

8:30 a. m. Registration.

Please register and obtain badge and ticket. Admission to all meetings by badge. Banquet by ticket.

9 a. m. First General Session, Parlors A, B, C, Deshler Hotel, William A. McAtee, Missouri, presiding.

Greetings, Governor Vic Donahey, Ohio.

Responding, Solomon Levitan, Wisconsin State Treasurer.

"Inspection—Its Critics," James Duce, State Inspector of Oils, Colorado.

Discussion led by Hjalmar Nilsson, State Inspector of Oils, Minnesota.

"The Distillation Board," E. D. Graham, Department Chemist, Oklahoma.

Permanent committees report.

Luncheon, adjournment.

2 p. m. Committees meet: Administration, Exemptions, Rate and Uses, and Inspection.

Tuesday, October 4

9 a. m. Second General Session, Parlors A, B, C, Deshler Hotel.

"Review of Recent Legislation," Edward Martin, Auditor General, Pennsylvania.

General discussion led by T. W. Bass, Gasoline Tax Administrator, Nebraska.

"Gasoline Tax in Canada," W. H. Brown, Department Public Highways, Ontario.

"Trend of Gasoline Tax Legislation—Views of the Industry," Frank E. Packard, Tax Attorney, Standard Oil Co., Chicago.

"Court Decisions," F. S. Hall, Commissioner of Finance and Taxation, Tennessee.

Luncheon, adjournment.

2 p. m. Business Committees Report.

Working Committees Report.

6 p. m. Banquet—Deshler Hotel.

Introduction of distinguished guests.

Wednesday, October 5

9 a. m. Working Committees Reports completed.

Adjournment of conference.

Executive committee meeting.

PANHANDLE RATES

AUSTIN, Tex., Sept. 24.—The Texas Railroad Commission has dismissed a petition for cancellation of differentials on carload shipments of ref ned petroleum on the Borger branch of the Panhandle & Santa Fe Railway; also dismissed a petition for cancellation of differentials on the Amarillo division of the Chicago & Alton Railway.

WILDCAT OPERATIONS IN WEST TEXAS

(Continued from Page 30)

Gulf Production Co.'s No. 1 G. L. Thompson, SW cor. Sec. 71, Blk. 1, I. & G. N. Sur. — Top big pay and total depth 988 ft. (corrected); flowed 600 bbls. first hour and 527 bbls. second hour with two strings tools in hole; pinched to 30 bbls. hourly and went to water, making 32 per cent b.s. and water; shut in.

Gulf Production Co.'s No. 2 G. L. Thompson, Sec. 71, Blk. 1, I. & G. N. Sur. — Rig.

Epeneaur et al's No. 1 Noelke, SW Sec. 30, Blk. GG, G. C. & S. F. Sur. — Shut down 352 ft.

George A. Henshaw and Geyer Oil Co.'s No. 1 Noelke-Murphy, 660 ft. S and E of NW cor. Sec. 10, Blk. PP, T. C. Ry. Sur., A-5,148 — Run 6-in. 1,435 ft.

C. A. Jones et al's No. 1 Powell — Drilling 540 ft.

Magnolia Petroleum Co.'s No. 2 Shannon — Show oil 2,885-90 and 2,992 ft.; total depth 4,100 ft.; fishing 20 joints 8-in. casing.

Newman Oil Co.'s No. 1 B. C. Clark — Location.

William Shaffer et al's No. 1 University, C SE SE Sec. 9, Blk. 47, University Sur., elev. 2,344 ft. — Total depth 2,344 ft.; plugged back to 2,208 ft.; shot 10 qts. 2,170-95 ft.; shut down 2,344 ft.

William Schaffer et al's No. 2 University, 1,350 ft. N and 2,610 ft. E of SW cor. Sec. 9, Blk. 47, University Land — Top salt 1,060 ft.; first oil show 2,190-96 ft.; second 2,225-29 ft.; about 30 ft. oil in hole; drilling 2,455 ft.

W. W. Donnelly & Young's No. 1 Massey, Sec. 29, Blk. U-V — Shut down 100 ft.

W. W. Donnelly, Young, Logan & Hult's No. 1 Pierce, C SW Sec. 150, Blk. O, G. H. & S. A. Sur., elev. 2,105 ft. — Rainbow show 454 and 540 ft.; drilling dark shale 1,910 ft.

P. H. Williams' No. 2 L. P. Powell — Pay 2,604-27 ft., 250 ft. oil in hole; premature shot parted casing.

McManmon Oil Co.'s No. 1 Blakeney — Drilling 900 ft.

World Oil Co.'s No. 1 Schneeman-B — Spudding.

World Oil Co.'s No. 1 Powell, Sec. 52, Blk. BB, G. C. & S. F. Sur. — Location

Young & Donnelly's No. 1 J. M. Shannon, C Sec. 11, Blk 9, D. & S. E. Sur. — Spudded and shut down.

CULBERSON COUNTY

James H. Gardner et al's No. 1 Radford, C SE Sec. 29, Blk. 62, Public School Land Sur. — Shut down at 585 ft. for 10-in. casing.

Scott & Dittman's No. 1 Miller, SW cor. NW NE Sec. 1, School Blk. 97 — Spudded and shut down.

DAWSON COUNTY

R. R. Penn's No. 1 Wright, elev. 2,842 ft. — Top salt 1,750 ft.; set 8-in. 2,449 ft.; drilling 3,640 ft.

ECTOR COUNTY

J. S. Cosden, Inc., et al's No. 2 Connell-A, NW cor. NE Sec. 13, B-16, School Land, elev. 2,844 ft. — Top salt 870 ft.; top lime 3,177 ft.; first show 3,420-22 ft.; pay 3,471-3,515 ft.; 160 ft. oil in hole; shot 180 qts.; estimated 1,000,000 ft. gas; swabbed and flowed 82 bbls. June 30; cleaned out and shut down for orders; 800 ft. oil in hole.

J. S. Cosden et al's No. 3 G. W. Connell-A, SE cor. NE Sec. 13, Blk. B-16, Elev. 2,849 ft. — Top salt 863 ft.; show oil 3,375 ft. and 3,499 ft.; top lime 3,195 ft.; shot 208 qts. 3,465-3,545 ft.; 300 ft. oil in hole; shut down.

FISHER COUNTY

Hucony Gas Co. & Marland Oil Co.'s No. 1 Langford — Hole full water 3,280 ft.; total depth 3,380 ft.; underreaming 6-in., 3,348 ft.

Ideal Oil Co.'s No. 1 Jameson, C SE Sec. 111, Blk. 1, H. & T. C. Sur. — Hole full salt water 2,345-2,520 ft.; shut down 3,304 ft.

Marland Oil Co. and Texon's No. 1 McCall, Sec. 108, Blk. 3, H. & T. C. Sur. — Rig.

Miley Oil Corp. and Marland Oil Co.'s No. 1 W. W. Ammons, Sec. 198, Blk. 3, H. & T. C. Sur. — Hole full sulphur water at 3,665 ft., underreaming at 3,400 ft.

R. W. Raney's No. 2 Maberry, Sec. 56, Blk. 1, T. & P. Sur. — Shut down for orders 2,725 ft.

Sinclair Oil & Gas Co.'s (was Bourdon Royalty Co.'s) No. 1 J. A. Danise, Sec. 6, Blk. K, T. & P. Sur. — Hole full water 2,830 ft.; drilling 3,030 ft.

The Texas Company's No. 1 D. S. Stevens, C SW SE SE Sec. 79, Blk. 1, H. & T. C. Sur. — 8-in. froze 2,302 ft.; fishing.

GAINES COUNTY

Westheimer & Daube's No. 1 Birge & Forbes Land Co., Sec. 303, Terrell County School Land. — Cemented 8-in. 3,900 ft.; drilling 4,010 ft.

GARZA COUNTY

Emerald Oil Co.'s No. 1 D. Boren, NW cor. NE Sec. 137, Blk. 5, H. & G. N. Sur. — Small show oil in gray lime 1,884-1,902 ft.; shut down 2,600 ft.; show oil and hole full water 2,420-60 ft.

GLASSCOCK COUNTY

California Co.'s No. 1 W. B. Currie, Sec. 215, Blk. 29, elev. 2,540 ft. — Water sand 1,085-90 ft.; fishing for bit 2,480 ft.

Green et al's No. 1 F. G. Oxsheer, Sec. 6, Blk. 34, T. & P. Sur., elev. 2,540 ft. — Shut down for orders 3,661 ft.; hole full sulphur water.

World Oil Co. and J. S. Meriwether's No. 1 L. S. McDowell, C SW Sec. 43, Blk. 34, Twp. 2-S, T. & P. Sur., elev. 2,553 ft. — Top salt 1,180 ft.; hole full sulphur water 3,225-35 ft.; underreaming 6-in. 3,555 ft.

HOWARD COUNTY

California Co.'s No. 1 Fisher Brothers, SE SW NW Sec. 36, Blk. 33, T. & P. Sur. T-1-S — Underreaming 12-in. 1,185 ft.

Sweeney et al's (was Fred Carey et al's) No. 2 G. O. Chalk, SE NW Sec. 124, Blk. 29 — Drilling 1,070 ft.

W. W. Donnelly et al's No. 1 Martin, SE cor. Sec. 41, Blk. 33, T-2 N, T. & P. Sur., elev. 2,552 ft. — Drilling 2,730 ft.

Henshaw et al's No. 1 S. T. Eason, Sec. 6, Blk. 32, T. & P. Sur., T-2-S — Show oil 1,340-54 ft.; shot 40 qts.; another show in sandy lime at 1,720-1,805 ft.; shot 60 qts. 1,720-50 ft., no results; T. D. 1,925 ft.

Henshaw et al's No. 1 W. R. Settles — T. D. 1,234 ft. set 8-in.

Marland Oil Co. and Zoch's No. 1 Jones, Sec. 32, Blk. 27, T. & P. Sur., elev. 2,218 ft. — Shut down 500 ft.

Marland Oil Co.'s No. 1 A. M. Fisher, Sec. 1, Blk. 33, T. & P. Sur., T-2-S, elev. 2,730 ft. — Drilling 3,160 ft.

Marland Oil Co.'s No. 1-A Guitar Trust Est. — T. D. 750 ft., run 15-in. 652 ft.

Marland Oil Co.'s No. 1 A. G. Haines, C SE Sec. 20, Blk. 32, T. & P. Sur., T-1-N — Top salt 1,145 ft.; drilling 2,500 ft.

Mayo, Nixon & Flowers' No. 1 W. J. Flowers — Rotary rig.

Peer Oil Corp.'s No. 1 Read, C NW Sec. 39, Blk. 30, T. & P. Sur., T-1-N — Drilling 600 ft.

Texon O. & L. Co. and Marland Oil Co.'s No. 1 Mrs. Connaly — Drilling 665 ft.

Texon O. & L. Co. and Marland Oil Co.'s No. 1 Mabel O. Quinn — Top lime 3,215 ft.; small show oil 3,345-55 and 3,370-80 ft.; drilling 3,550 ft.

HUDSPETH COUNTY

Lockhart Brothers' No. 1 Gardner & Moseley, C SE Sec. 5, School Blk. 21 — Shut down 235 ft.

Lockhart & Co.'s No. 1 Moore, C SE Sec. 16, Blk. 71, T. & P. Sur. T-6 — Rig.

IRION COUNTY

Cash Dollar et al's No. 1 G. J. Bird, NE Sec. 16, Blk. 10, S. P. R. R. Sur. — Shut down 2,500 ft.

JEFF DAVIS COUNTY

J. K. Hughes Dev. Co.'s No. 2 Means, — Drilling 100 ft.

Humble O. & R. Co.'s No. 2 Crecencio Flores, 1,130 ft. N and 850 ft. E of SW cor. Sec. 34, Blk. 58, T. & P. Sur., Twp. 8 — Drilling 1,000 ft.

JONES COUNTY

Gibson & Johnson's (was Cole & Hart's) No. 1 Joe Dillard, NW cor. Sec. 2, Blk. 17, T. & P. Sur. — Hole full water 1,505-40 ft.; set 10-in. 1,545 ft., drilling 1,555 ft.

Midwest Exploration Co.'s (was Campbell et al's) No. 1 L. H. Herndon, Sec. 6, M. E. P. & P. Sur., elev. 1,832 ft. — Top pay 2,498 ft.; deepening to 2,524 ft.; swabbed 115 bbls.; shut down for orders 3,009 ft.

Garland & Diamond's No. 1 E. D. Glynn, SE cor. Sec. 18, Deaf & Dumb Asylum Lands — Seven bailers salt water per hour at 1,465-1,500 ft.; hole full water 1,900-07 ft.; drilling 2,050 ft.

Hutson & Weaver's No. 1-A Smith, Sec. 51, Blk. 18, T. & P. Sur. — Shut down 800 ft.

Marston Oil Co.'s No. 1 E. Howell, NW cor. SE W ¼ of N 400 acres, Sec. 20, Blk. 19, T. & P. Sur. — Small show oil 2,496 ft.; shut down 2,545 ft.

Marston Oil Co.'s No. 1 J. S. Swan, Robert Spears Sur. No. 280 — Hole full salt water 2,390-2,400 ft. and 2,435 ft.; hole full salt water 2,015-20 ft.; shut down 3,503 ft.

W. G. Stough and others' No. 1 J. P. Willis, J. C. Patterson Sur. No. 2 — Fishing tools 1,740 ft.

Stebbins Oil Co.'s No. 2 Higgs, SE cor. Sec. 30, W. T. Scott Sur. — Location.

Stebbins Oil Co.'s No. 1 Scott — Building rig.

Swensondale Oil Co.'s No. 1 Caton, SW NW Sec. 9, Deaf & Dumb Asylum Lands — Shut down 2,505 ft.

KENT COUNTY

Marland Oil Co. and Texon O. & L. Co.'s No. 1 Bilby, Sec. 41, Blk. K, Thompson Sur. — Location.

KNOX COUNTY

Deep Rock Oil Co.'s No. 1 Beavers, CSL Sec. 224, Blk. 44, elev. 1,441 ft. — Total depth 2,865 ft.; rig rebuilt.

Deep Rock Oil Co.'s No. 1 Big Four, 1,270 ft. S and 2,590 ft. W of NE cor. Sec. 31, Blk. 4 — Set 8-in. at 2,155 ft., cleaning out.

Humble O. & R. Co.'s No. 1 Goode, 1,940 ft. S and 200 ft. W of NE cor. Sec. 7, H. T. & B. Sur. — Hole full water 1,710-15 ft., and 2,760-2,800 ft.; drilling 4,432 ft.

The Texas Company's No. 1 J. O. Bowden, Sec. 115, Blk. 45, H. & T. C. Sur. — Lime 1,240-45 ft.; estimated 100,000 ft. gas; hole full water 1,835 ft.; shut down 2,250 ft.; skidding rig.

The Texas Company's No 1 Teague — Drilling 3,365 ft.

LOVING COUNTY

Kingwood Oil Co.'s No. 1 T. O. Moore, C NE Sec. 2, Blk. B-25, Public School Land, elev. 3,120 ft. — Top salt 1,210 ft.; show gas 1,600-15 ft.; 800 ft. sulphur water from 4,020-25 ft.; drilling 5,235 ft., top Delaware 5,227 ft.

Owens & Sloan's No. 1 W. D. Johnson, C SE Sec. 20, Blk. 53, T-2, T. & P. Sur., elev. 2,934 ft. — Shut down 1,020 ft.; in litigation

LYNN COUNTY

Elpo Oil Co.'s No. 1 Nevols, NW cor. Sec. 6, Blk. C-42, School lands — Rotary; drilling 150 ft.

The Hart Oil Corp.'s No. 1 C. O. Edwards, NW NW Sec. 5, Blk. 2, L. & S. V. Sur. — Shut down 1,400 ft.

MIDLAND COUNTY

Orbit Oil Co.'s No. 1 Moreland, C SE Sec. 17, Blk. 39, T. & P. Sur. T-1-S — Shut down 185 ft.

MITCHELL COUNTY

Robert Thraves' No. 1 C. Way, Sec. 91, Blk. 27, T. & P. Sur. T-1-N — Total depth 2,508 ft.; fishing tools.

Tex-O-Kan Oil Co. and Robert Thraves' No. 1 W. F. Sanders — Hole full water 3,325-46 ft.; drilling 3,746 ft.

B. E. Walter et al's No. 1 J. E. Dollen, NW cor. SW Sec. 11, Blk. 27, T. & P. Sur. — Shut down 2,955 ft.; hole full sulphur water.

NOLAN COUNTY

J. H. Winemiller Corp.'s (was Peters et al's) No. 1 Booth, Sec. 90, Blk. 21, T. & P. Sur. — Shut down for orders at 3,212 ft., contract depth.

Herbert Oil Co.'s (was McClesky and others') No. 1 Pepper, SE cor. SW Sec. 29, Blk. 22, T. & P. Sur. — Rigged up and shut down.

Zweifel and others' No. 1 Longbotham, C SE Sec. 130, Blk. 1, H. & G. N. Sur. — Repairing rig 3,575 ft.

PECOS COUNTY

George Anderson et al's No. 1 McKenzie, C SE N half Sec. 6, Blk. 604 — Top salt 1,010 ft.; drilling 1,235 ft. in salt.

George Anderson's No. 1 Sherbine Brothers — Rig on ground.

Allsman & Bell's No. 3 Pecos River bed — Driving pilings.

Benedum & Trees' No. 1 J. C. Trees, C NW SE SE Sec. 30, Blk. 7, H. & G. Sur., elev. 2,556 ft. — Flowed sulphur water 3,250 ft.; shut down 3,460 ft.

Buell et al's No. 1 Batchelor, C N ½ NE Sec. 89, Blk. OW, G. C. & S. F. Sur., elev. 3,188 ft. — Show oil 1,700 ft.; flowed sulphur water 1,775 ft. and 2,800 ft.; shut down 2,820 ft.

Buell & Hagan's No. 1 Jasper, 1 mi. S and W NE cor. Jasper Co. School Land No. 104, Elev. 3,307 ft. — Top salt 1,527 ft.; shut down 2,517 ft. in anhydrite.

California Co.'s No. 2 Yates, Sec. 34, Blk. 194, Elev. 2,502 ft. — Rig.

California Co.'s No. 3 Yates, Sec. 34, Blk. 194, Elev. 2,502 ft. — Drilling 741 ft.

California Co.'s No. 4 Yates, Sec. 34, Blk. 194 — Drilling 430 ft.

California Co.'s No. 5 Yates, Sec. 34, Blk. 194 — Crooked hole 78 ft.

California Co.'s No. 1 M. A. Smith, NE cor. Sec. 35, Blk. 194, Elev. 2,544 ft. — Cement 8-in.; 840 ft.

California Co.'s No. 2 M. A. Smith — Drilling 620 ft.

Douglas Oil Co.'s No. 1 J. T. Sellman — Drilling 210 ft.

Day Bros. & McKnight's No. 1 Yates, NW cor. Sec. 58, Blk. 1 — New location.

M. Z. Dibbie & Hale's No. 1 Bonebrake, Sec. 115, Blk. 8, H. & G. W. Sur. Elev. 2,555 ft. — Drilling 585 ft.

Bob Elmore's No. 1 M. Holmes, Sec. 542, Blk. 1, I. & G. N. Sur., elev. 2,176 ft. — Top salt 335 ft.; slight show oil and 2 bailers sulphur water 1,500 ft.; small show gas at 1,515 ft.; shut down 1,856 ft. anhydrite.

Garland & Mott's No. 1 El Paso Cattle Loan Co., C NE Sec. 26, Blk. 126, T. & S. L. Sur., elev. 3,267 ft. — Hole full sulphur water 2,560 ft.; drilling 2,735 ft.

George A. Henshaw et al's No. 1 B. T. Corder, cen. SW Sec. 74, Blk. 2, C. C. S. D. Sur. — Location.

George A. Henshaw, Jr., No. 1 Snyder, Sec. 29, Blk. 144, T. & St. L. Sur. Elv. 2,780 ft. — Drilling by tools 440 ft.

Humble O. & R. Co.'s No. 1 M. A. Smith, NE cor. Sec. 36, Blk. 194, G. C. & S. F. Sur. Elev. 2,727 ft. — Drilling 1,304 ft.

Kirby Oil Co.'s No. 1 W. W. Turney, NW cor SW Sec. 11, Blk. 140, T. & St. L. Sur. — Moving in tools.

Mazda Oil Co. and Savoy Oil Co.'s No. 1 Smith, Sec. 34, Blk. 194, G. C. & S. F. Sur. — Drilling 915 ft.

Mazda Oil Co. and Savoy Oil Co.'s No. 2 Smith, Sec. 34, Blk. 194, G. C. & S. F. Sur. — Location.

McMan and Marland's No. 2 I. G. Yates Elev. 2,520 ft. — Drilling 635 ft.

McMan and Marland's No. 3 I. G. Yates. Elev. 2,536 ft. — Cementing at 1,204 ft.

McMan and Marland's No. 4 I. G. Yates. Elev. 2,578 ft. — Drilling 1,190 ft.

McMan and Marland's No. 5 I. G. Yates. Elev. 2,826 ft. — Drilling 720 ft.

McMan and Marland's No. 6 I. G. Yates. Elev. 2,770 ft. — Set 10-in. 720 ft.

Mid-Kansas and Transcontinental Oil Co.'s No. 2 Smith-Taylor — Run 8-in. 828 ft.

Mid-Kansas and Transcontinental's No. 3 Smith-Taylor,

Sec. 33, Blk. 194 ... Building road.
Mid-Kansas and Transcontinental's No. 1 Mrs. M. A. Smith ... Drilling 415 ft.
Mid-Kansas and Transcontinental's No. 4 Yates-B ... Location.
Mid-Kansas and Transcontinental's No. 8 Yates-A ... Shut down for water 200 ft.
Moody Oil Corp.'s No. 1 B. T. Corder, cen. SW Sec. 77, Blk. 2, C. C. S. D. Sur. ... Location.
Olean Petroleum Co.'s No. 1 G. N. Harral, CSW Sec. 82, Blk. R-3, G. C. & S. F. Sur. Elev. 3,005 ft. ... Shut down 748 ft.
Quinby Oil Co.'s No. 1 Townsite, Sec. 1, Blk. 267, Client Addition Sur. Fort Stockton, elev. 2,980 ft. ... Shut down 3,440 ft.
Quinby Oil Co.'s No. 2 Bennet, C NW 592, Blk. 105, G. C. & S. F. Sur., elev. 2,560 ft. ... Shut down 1,457 ft.
Quinby Oil Co.'s No. 1 A. A. Gray, 660 ft. N and 1,320 ft. E. SW cor. Sec. 593, Abst. 3,009, Elev. 2,551 ft. ... Shut down 700 ft.
Red Bank Oil Co.'s No. 2 M. A. Smith, Sec. 24, Blk. 194 (330 ft. S of No. 1) ... Location.
Roxana Petroleum Corp.'s No. 1 Smith-A, Sec. 27, Blk. 194 ... Drilling 595 ft.
Roxana Petroleum Co.'s No. 1 J. H. Tippett, Sec. 102, Blk. 194, Elev. 2,628 ft. ... Cement 8-in. 1,290 ft.
W. R. Shankel et al's No. 1 I. G. Yates, CSL SW SE SE Sec. 58, Blk. 1, I. & G. N. Sur., elev. 2,220 ft. ... Top salt 425 ft.; 40 ft. oil 1,313 ft.; sulphur water 1,478-79 ft.; water plugged off; shut down.
Simms Oil Co.'s No. 1 M. A. Smith, SW cor. Sec. 103, Blk. 194, Elev. 2,596 ft. ... Show oil 1,276 ft., flowing 64 bbls. an hour at 1,340-58 ft.
Transcontinental Oil Co.'s No. 1 Blackstone & Slaughter, Sec. 29, Blk. 129, F. St. L. Sur. Elev. 3,539 ft. ... Drilling 1,060 ft.
World Oil Co.'s No. 1 Kloh, Sec. 47, Blk. 48, Township 8, T. P. R. R. Sur. Elev. 2,810 ft. ... Rig on ground.
World Oil Co.'s No. 1 Serf, SW cor. NE Sec. 10, Blk. 130, T. & St. L., elev. 3,245 ft. ... Location.

PRESIDIO COUNTY

Headlock & Miller's No. 1 Tootle est., Sec. 123, Blk. 3, D. & P. Sur., elev. 2,912 ft. ... Salt water 2,610 ft.; running 5-in. at 2,855 ft.; total depth 2,910 ft.; shut down.
Pinto Canyon Oil Co.'s No. 1 Fields, 1,760 ft. S & E NW cor. Sec. 74, Blk. 2, D. & P. Sur. ... Location.

REAGAN COUNTY

Henshaw & Camp's No. 1 University, Sec. 14, Blk. 49, University Land, elev. 2,772 ft. ... Drilling.
Texon O. & L. Co.'s No. 1-B University, Group 1 ... Top pay 6,284 ft.; shut down for motor 6,590 ft. with 3,800 ft. of 38.7 gravity oil in hole.
Marland Oil Co.'s No. 1 University-Anderson, Sec. 19, Blk. 58, University Land ... Location.

REEVES COUNTY

Exploration Co.'s No. 1 A. A. Kinney, 1,500 ft. W. of NE cor. Sec. 26, Blk. C-18, Public School Land. Elev. 2,847 ft. ... Shut down for 15-in., 325 ft.
David R. Thompson's No. 1 A. A. Eddins ... Underreaming 10-in., T. D. 1,297 ft.
World Oil Co.'s No. 1 Biggs, C SE Sec. 65, Blk. 112, Public School Land Sur., elev. 3,068 ft. ... Shut down 1,610 ft.; tools moved to No. 1 Duff.
World Oil Co.'s No. 1 Duff, elev. 2,753 ft. ... Top Delaware lime 4,185 ft., shut down for orders 4,189 ft.

RUNNELS COUNTY

Lou Ladd & C. E. Sillix et al's No. 1 R. M. McMillan ... Top pay 2,545 ft.; 6-in. set at 2,420 ft.; ran 5-in. with pack r; flowed 120 bbls. Sept. 22.
Kennedy et al's No. 1 J. E. Tally ... Rigging up cable tools.
Miles Oil Co.'s No. 1 L. S. Lawhon, NE cor. Sec. 68, Noble O. & G. Co.'s No. 1 Sims, Sec. 12, J. J. McHenry Sur. ... Drilling 700 ft.
Swensondale Oil Co.'s No. 1 E. A. Werner ... Drilling 2,175 ft.
Owenwood Oil Corp.'s No. 1 H. B. Fowler ... New location; building rig.
Location.

SCHLEICHER COUNTY

Beavers & Leath et al's No. 1 J. A. and W. T. Whitten, C NW Sec. 35, Blk. 11, T. C. Sur. ... Shut down 400 ft.
Thomas Grey et al's No. 1 Ball Robinson, C NW Sec. 25, Blk. M, G. H. & S. A. Sur. ... Sulphur water 2,125 ft.; hole full water 2,160-80 ft.; drilling 2,725 ft., sandy shale.

STERLING COUNTY

Orr et al's No. 1 Neal Reed, CNL Sec. 15, Blk. 30, W. & N. W. Sur. ... Shut down 1,390 ft.

STONEWALL COUNTY

Peer Oil Corp. and Producers Oil Co.'s (was J. P. Johnson's) No. 1 R. P. Morrow ... Drilling 2,150 ft.

TAYLOR COUNTY

A. J. Brown et al's No. 1 Henslee, NE cor. Sec. 5, Blk. 4, S. P. R. R. Sur. ... Drilling 2,160 ft.
Dorning & Perrine's No. 1 J. A. Hammer, C N 100 acres, Sec. 23, Blk. 19, T. & P. Sur., elev. 1,904 ft. ... Shut down 455 ft.
Gilbert Johnson's No. 1 C. M. Brown, Sec. 1, Blk. 6, T. & P. Sur. ... Spudded and shut down.
Owen & Sloan's No. 1 Lattimer, Sec. 14, Blk. 9, T. & P. Sur. ... Fishing 2,605 ft.
Roeser & Pendleton's No. 1 Sam Hutman, C W ½ NW Sec. 64, Blk. 5, T. & P. Sur. ... Water sand 2,222 ft.; drilling 2,300 ft.

TERRY COUNTY

Kingsland Oil & Potash Co.'s No. 1 Brownsfield, C NW SW SW Sec. 7, Blk. 1-A, E. L. R. R. Sur. ... Slight show gas 2,230 ft.; shut down 2,650 ft.

TOM GREEN COUNTY

George Amery's No. 1 Wilkey, C SW Sec. 3, B. A. L. Sur. ... Location.
Dullahan et al's No. 1 Jacobs, Sec. 1,011, H. E. & W. T. Sur. ... Shut down for orders 632 ft.
Fitzgerald et al's No. 1 Bennett ... Shut down for casing 1,250 ft.
Tulsa Oil Co.'s No. 1 Adams, C SW Sec. 162, Blk. 11, S. P. R. R. Sur. ... Shut down 735 ft.

UPTON COUNTY

Mark Curtis et al's (was Hultz et al's) No. 2 Giddings, 5,336 ft. S and 6,678 ft. E of NW cor. Throckmorton Co. School Land, League 1, Elev. 2,757 ft. ... Spudded and shut down.
J. M. Hickey's No. 1 W. I. Gormley, 1,650 ft. from SW and SE lines Sec. 7, Blk. 36, H. & T. C. Sur. Elev. 2,374 ft. ... Top salt 472 ft.; set 5-in. 1,775 ft.; small show gas; drilling 1,810 ft.
Texas Co. & Cordova Union's No. 1 Union Land, Sec. 23, Blk. 35, H. & T. C. ... New location.
R. H. Paxton's No. 1 J. T. Lane, Sec. 3, G. C. & S. F. on Orient right of way ... New location; moving in rig.
Wise & Jackson's No. 1 J. H. Porter, SW cor. SW SW Sec. 184, Blk. E. Elev. 2,592 ft. ... Top salt 1,370 ft.; top lime 3,379 ft.; top pay 3,419 ft.; total depth 3,517 ft.; shot 160 qts. at 3,414-3,508 ft.; 300 ft. oil in hole before shot; now 900 ft. sulphur water and 300 ft. oil; shut down.

VAL VERDE COUNTY

A. Blume et al's No. 1 Moore est., Sec. 183, J. Mitchell Sur., elev 953 ft. ... Shut down 3,000 ft.
Curso Williams' No. 1 Holman, NE NE Sec. 5, Blk. N, G. H. & S. A. Sur. ... Shut down 2,940 ft.
Douglas Oil Co.'s No. 1 Sellars, C SE Sec. 32, Blk. A, I. & G. N. Sur. ... Shut down 3,010 ft.
East Del Rio Oil Co.'s No. 1 Russell, SE cor. Sec. 183, Del Rio Town Sur. Elev. 941 ft. ... Total depth 3,190 ft.; cleaning out.
Hiawatha Oil Co.'s No. 1 Sellars, C Sec. 1,031, Blk. A, I. & G. N. Sur. ... Hole full salt water 2,455 ft.; shut down 3,503 ft.
Magnolia Petroleum Co.'s No. 1 Whitehead, Sec. 81, D. G. C. & S. F. Sur., elev. 1,770 ft. ... Set 6-in. 3,525 ft.; drilling 3,610 ft.
Independent Operators' No. 1 Whitehead, SE SE Sec. 30, Blk. 4, I. & G. N. Sur., elev. 1,175 ft. ... Shut down 3,900 ft.
O. O. Owens' No. 1 Mills, Sec. 128, Blk. 1, I. & G. N. Sur., elev. 2,130 ft. ... Gas sand 2,491-2,520 ft.; tested 125,750 ft. gas; reset 8-in. 2,511 ft.; shut down 2,801 ft.

WINKLER COUNTY

Amerada Petroleum Corp.'s No. 1 J. B. Walton, SW cor. NW Sec. 48, Blk. 26 ... Moving in rig and building road.
Atlantic O. P. Co.'s No. 1 Ida Hendricks, SE cor. W ½ NE Sec. 44, Blk. 26 ... Drilling 650 ft.
Atlantic O. P. Co.'s No. 1 Grisham-Hunter, Sec. 34, Blk. B-5, Elev. 2,823 ft. ... Shut down 2,522 ft.
Atlantic O. P. Co.'s No. 1 Lemar ... New location; building rig.
Cranfill Brothers' No. 1 M. J. Bashara, at cor. Secs. 10, 11, 22 and 23, School Blk. 77 ... Drilling 1,650 ft., anhydrite.
Cranfill & Reynolds' No. 1 Ida Hendrick, C SW NW NW Sec. 28, Blk. B-5, Elev. 2,814 ft. ... Top salt 1,290 ft.; cemented 8-in. 2,247 ft.; standardizing.
Cranfill & Reynolds' No. 2 Ida Hendricks ... Drilling 240 ft.
Cranfill & Reynolds' No. 1 Grisham-Hunter-A ... New location.
Group 1 Humble O. & R. Co.'s No. 1 T. G. Hendricks, C SE Sec. 36, Blk. 27, elev. 2,823 ft. ... Running 6-in. 2,500 ft.; top salt 2,120 ft.
Humble O. & R. Co.'s No. 1 T. G. Hendricks, NW cor. NE Sec. 43, Blk. B-5, Public School Land, elev. 2,816 ft. ... Pocket of gas at 2,500 ft.; blew tools out through rig; estimated 5,000,000 ft. gas; shut down 2,756 ft.; gas increased from 8,000,000 to 15,000,000 ft.; blew tools up in hole; stuck in pipe; trying to kill gas to fish bit.
Humble O. & R. Co.'s No. 2 T. G. Hendricks, SE cor. NE Sec. 34, Blk. B-5, Elev. 2,824 ft. ... Cemented 8-in. 2,230 ft.; top salt 1,340 ft.
Independent O. & G. Co.'s No. 1 J. S. Howe-D, NE cor. W ½ SE Sec. 44, Blk. 26 ... Cementing 12-in. 377 ft.
Independent O. & G. Co.'s No. 1 Hendricks-A, elev. 2,816 ft. ... 250,000 ft. gas 2,555-75 ft.; set 8-in. 2,595 ft.; shut down 2,601 ft. (steel line measurement).
Independent O. & G. Co.'s No. 2 Hendricks-A, elev. 2,822 ft. ... Cemented 6-in. at 2,475 ft. and shut down at 2,504 ft. (steel line measurement).
Liner Drilling Co.'s No. 1 Seth-Campbell, NE cor. Sec. 2, Blk. B-5 ... Moving in rotary tools.
Landreth Prod. Corp.'s No. 1 Grisham-Hunter, SW cor. SW NW Sec. 45, Blk. 26, School Land ... Standardizing 2,560 ft.
Landreth Prod. Corp.'s No. 2 Grisham-Hunter, SE cor. W ½ NW Sec. 45, Blk. 26 ... Drilling 1,315 ft.
Landreth Prod. Corp.'s No. 1 Hendricks, SE cor. SW Sec. 29, Blk. B-5 ... Drilling 2,340 ft.
Marland Oil Co.'s No. 1 Grisham-Hunter ... Location.
Marland Oil Co.'s No. 2 Grisham-Hunter ... Rigging up.
Marland Oil Co.'s No. 3 Grisham-Hunter ... Set 12-in. 185 ft.
Marland Oil Co.'s No. 4 Grisham-Hunter ... Location.
Mining & Engineering Co.'s No. 1 T. G. Hendricks, Sec. 10, Blk. B-12 ... Spudded and shut down.
R. S. Matthews et al's No. 1 State, C Sec. 7, Blk. A-57, Public School Land Sur. Elev. 3,128 ft. ... Top salt 1,623 ft.; shut down 3,500 ft.; contract completed.
Murchison Oil Co. and Cranfill Brothers' No. 2 Grisham-Hunter ... Moving in rig.
Murchison Oil Co. and Cranfill Brothers' No. 3 Grisham-Hunter ... Drilling 200 ft.
Murchison Oil Co. and Cranfill Brothers' No. 4 Grisham-Hunter ... Location.
Murchison Oil Co. and Cranfill Brothers' No. 1 Grisham-Hunter-B ... Drilling 550 ft.
Pure Oil Co.'s No. 2 Hendricks, elev. 2,827 ft. ... Top salt 1,518 ft.; top lime 2,390 ft.; made 20-bbl. head at 2,435-43 ft.; 1,200 ft. oil in hole 2,657-80 ft. shut down.
Pure Oil Co.'s No. 1 Hendricks-B, NE cor. SE, Sec. 34, Blk. B-5 ... Rotary; top salt 1,395 ft.; top lime 2,276 ft.; cemented 8¼-in at 2,284 ft.; standardizing.
Pure Oil Co.'s No. 2 Hendricks-B ... Top salt 1,295 ft.; drilling 1,756 ft.
Pure Oil Co.'s No. 3 Hendricks-B ... Rig on ground.
Pure Oil Co.'s No. 4 Hendricks-B ... New location.
Republic Prod. Co.'s No. 1 Grisham-Hunter-A, NW cor. E ½ SW Sec. 45, School Block 26 ... Drilling 1,410 ft.
Republic Prod. Co.'s No. 1 Grisham-Hunter-B, SW cor. E ½ SE Sec. 41, Blk. B-5 ... Top salt 1,300 ft.; run 12-in. 1,475 ft.
Republic Prod. Co.'s No. 2 Grisham-Hunter-B ... New location.
Roxana Petroleum Corp.'s No. 1 Grisham-Hunter-A, SW cor. E ½ NW Sec. 45, School Block 26 ... Drilling 1,585 ft.
Roxana Petroleum Corp.'s No. 1 Grisham-Hunter-B, SW cor. S ½ SE Sec. 29, Blk. B-5 ... Cement 8-in., 2,560 ft.
Roxana Pet. Corp.'s No. 1 Grisham-Hunter-C ... New location.
Roxana Petroleum Corp. and Llano Oil Co.'s No. 1 Scarborough, C Sec. 1, Blk. C-22, Public School Land, elev. 2,921 ft., top lime 3,132 ft. ... Top salt 1,115 ft.; hole full water 1,321 ft.; 10-in. set 1,570 ft.; top pay 2,990 ft.; second pay 3,124-28 ft.; swabbed 115 bbls. July 17; total depth 3,447 ft. (steel line measurement), sulphur water; plugged back to 3,347 ft.; raised pipe to 2,975 ft.; shot with 200 qts. 3,120-3,300 ft.; hole caved in on top of tools; fishing.
Southern Crude Oil Pur. Co.'s No. 3 T-67 Hendricks-C, SE cor. NE Sec. 33, Blk. B-5, elev. 2,816 ft. ... Top salt 1,870 ft.; little gas 2,630-40 ft.; shut down for orders 2,735 ft.; making 2,000,000 ft. gas and 1 bbl. oil; top lime 2,630 ft.
Southern Crude Pur. Co.'s No. 4 T-67 Hendricks-C, Elev. 2,810 ft. ... Cemented 8-in. 2,525 ft.; small show oil and gas 2,660-65 ft.; gas increased 2,689-90 ft.; estimated 3,000,000 ft. gas 2,720 ft.; 1½ bbls. oil 2,735-40 ft.; shut down.
Southern Crude Oil Pur. Co.'s No. 1 T-88 Hendricks-B-2 ... Rig on ground.
Southern Crude Oil Pur. Co.'s No. 1-F Hendricks, Sec. 33, Blk. B-5, NE cor. SE ... Cemented 6-in. 2,529 ft.; standardized and shut down.
Southern Crude Oil Pur. Co.'s No. 1 T-89 Grisham-Hunter-A, CWL NE SW Sec. 35, Blk. B-5, Elev. 2,816 ft. ... Top salt 1,219 ft.; top lime 2,295 ft.; drilling 2,400 ft.
Texon O. & L. Co.'s No. 2 Grisham-Hunter-A ... Drilling 730 ft.
Texon O. & L. Co.'s No. 1 Grisham-Hunter-B, NW cor. W ½ SW Sec. 45, School Block 26 ... Shut down for 20-in. at 220 ft.
Texon O. & L. Co.'s No. 2 Grisham-Hunter-B ... Rigged up and shut down.
White Eagle O. & R. Co.'s (was Gibson & Johnson's), No. 1 R. A. Lock, 1,320 ft. W of NE cor. Sec. 30, Blk. 74, NW of discovery well, elev. 2,830 ft. ... Drilling 2,260 ft.
Southern Crude O. P. Co.'s No. 3 T-67 Hendrick-A, C SW NW NE Sec. 4, Blk. B-12, Elev. 2,784 ft. ... Top salt 1,540 ft.; cementing 6-in. 2,619 ft.
Southern Crude Oil Pur. Co.'s No. 3 T-67 Hendricks-A-2 ... Drilling 320 ft.
Southern Crude O. P. Co.'s No. 1 T-67 Hendrick-B, NE cor. SE Sec. 44, Blk. 26 ... Junked hole 1,000 ft.; skidded 40 ft. south; drilling 1,650 ft.
Tidal Oil Co.'s (was L. D. Ladd et al's) No. 1 J. W. Amburgey, C Sec. 24, Blk. B-7, Public School Land Elev. 2,992 ft. ... Top salt 1,220 ft.; drilling 4,153 ft.
Southern Crude O. P. Co.'s No. 3 T-68 Grisham-Hunter-A-1, SW cor. W ½ NW Sec. 35, Blk. B-5 ... Top salt 1,365 ft.; top lime 2,308 ft.; cementing 6-inch 2,313 ft.
Southern Crude O. P. Co.'s No. 2 T-88 Hendricks-C, Sec. 28, Blk. B-5 ... New location.
Southern Crude O. P. Co.'s No. 3 T-68 Grisham-Hunter A-2 ... New location; moving in rotary.
Southern Crude O. P. Co.'s No. 1 T-88 Ida Hendricks-C, NW cor. Sec. 28, Blk. B-5 ... Cement 6-in. 2,429 ft.

HAZARD WIRE LINES

They Stand First

This Letter Speaks for Itself:-

Dallas, Texas
July 2nd, 1927,

Gentlemen:—

With reference to the Hazard Special Drilling Lines we are using in the Church-Fields area, will say we placed our first line in service approximately three months ago on our C-1 well. This line has been used constantly, cleaning out, agitating, and under heavy swabbing conditions.

The line has proven very satisfactory in every respect, in fact looks just as good today as the day we put it on. In my estimation this has been the only line so far to resist the corrosion conditions in west Texas .....

We are glad to inform you we will standardize on the Hazard Special Drilling Line for our future operations in West Texas.

Yours very truly,
ATLANTIC OIL PRODUCING COMPANY
By *(Signed)* Fred G. Leidecker.

FGL:JB

The Service Proves It

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Wilkes-Barre, Pa. — 1625 South Troost Ave., Tulsa

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Distributors in Texas
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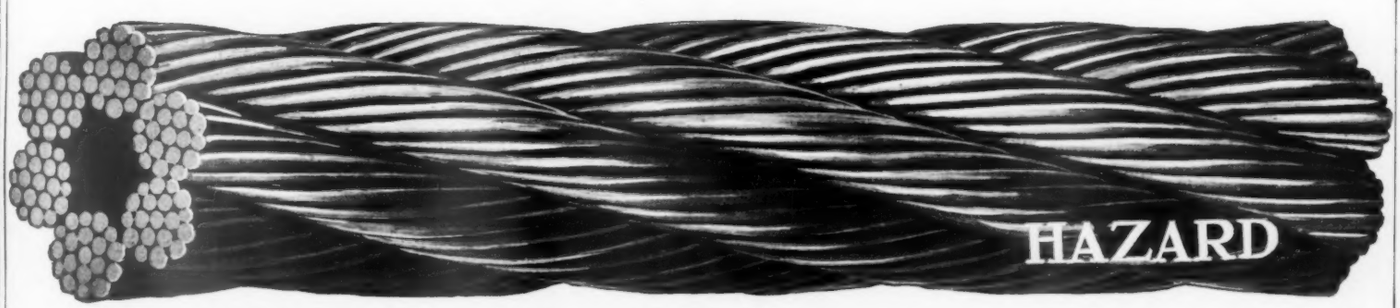

The Simplest Vacuum Control—

Davis Casing Head Gas Regulators

THIS Davis Casing Head Gas Regulator is one of half a dozen on the same line, each controlling an individual well and automatically maintaining the well vacuum required. This kind of an installation is standard practice in all the large fields. Practically every natural gasoline manufacturer uses Davis Regulators.

With this valve an extremely accurate regulation can be secured by a simple installation, taking an equalized control vacuum from the line a short distance from the valve.

The diaphragm size is standard for all regulators from 2 inch to 8 inch sizes, and with the interchangeable diaphragm chambers this feature greatly simplifies repairs or maintenance attention. Accurate, consistent service in the most exposed locations is assured by the weatherproof construction.

Get the full description of the Davis exclusive features of design and you will see why the great majority of users say, *"They can't be beat!"*

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TULSA LOS ANGELES DALLAS

Pressure regulator	Exhaust relief valve	Flow regulator
Balanced valve	Stop and check valve	Non return valve
Float valve	Strainer	Fluid level controller
Fluid control valve	Bleeder valve	Float box
Back pressure valve	Steam trap	Pump governor

Valve Makers For Over Fifty Years

DAVIS VALVE SPECIALTIES

O&GJ 9-29 Gray

DECLINE NOW LARGELY SEASONAL; STEEL PRODUCTION TAPERING OFF

By B. E. V. Luty

PITTSBURGH, Pa., Sept. 26.—Demand for oil country tubular goods has continued slipping off a little. It was not heavy at any time this year and the decrease in the past few weeks has not been large. The latest decrease is largely seasonal in character.

Demand for standard or merchant pipe is running approximately the same as in July and August, when it was a trifle lighter than in the first half of the year. The decrease was chiefly in pipe for various manufacturing uses, and such demand has not improved with the advent of autumn. Demand from jobbers, for building operations of various sorts, is much the same as it has been for a couple of months past. It is not due for a seasonal decrease until late in the year.

Steel demand as a whole has plainly been tapering off somewhat since the first of the month. This makes September a poorer month than either July or August when according to all precedents there should be an increase, on seasonal grounds.

Production 65 per Cent

Steel production during July and August was at about 69 per cent of full capacity, while 65 per cent is an outside estimate for the present rate of production, which indeed may be nearer 60 per cent.

The light demand for oil country tubular goods has been experienced all this year and thus is nothing new. Light demand from the railroads has been the experience for several months, and even early in the year such demand hardly compared favorably with that of last year. As to the automobile industry right along it has been taking less steel than last year, while the decrease observed in the past two or three weeks is a seasonal one as automobile production commonly slows down slightly after August and rather sharply in the last two or three months of the year.

The agricultural implement industry, on the other hand, has been increasing its operations and is running at a very good pace, with excellent prospects for the remainder of the year, better than it had a year ago at this date, as it was then on the verge of a curtailment. Fabricated structural steel lettings have been heavier since July 1 than in the same period last year, but there is now hardly as good business in prospect as a year ago.

In various finished steel lines prices are less secure than a few weeks ago. The price situation in bars, shapes and plates is in a state of flux. Efforts are being made by mills which present some appearance of representing advances, but these efforts are made to counteract weakness, and so the question is which will prevail. Briefly, the situation is that until very recently bars, shapes and plates were at a flat price of 1.80 cents, Pittsburgh, for large lots or small lots down to carloads, while the Chicago market had settled to its equivalent, 1.90 cents, Chicago. On the one hand, competition of Buffalo mills appeared in the Chicago market, with quotations of 1.80 cents, Chicago, and on the other hand it appears that Pittsburgh mills would be unable to continue maintaining 1.80 cents on large lots when that had become the small lot price. Thereupon the Carnegie Steel Co. adopted prices of 1.75 cents on large lots and 1.85 cents on small lots, these figures representing an advance and a decline at the same time. It seems that large buyers can buy at 1.75 cents even if they buy in relatively small lots at a time.

Prices Debatable

Sheet prices have been open to considerable question. A claim is made that prices have grown steadier in the past week, but this is not proved.

Pipe prices are held very steadily according to all appearances, except on large lots of line pipe, in which close prices would be named. Three or four large natural gas lines are in sight. The A. O. Smith Corp., Milwaukee, has shipped the first six trainloads of 225 of 22-inch gas line pipe for the Dixie Gulf Gas Co. line under construction by the Hope Engineering Co. from the Shreveport area to Houston and Port Arthur, Tex. The total order is for 278 miles, making about 45,000 tons, or 1,800 carloads. The pipe is being produced now at the rate of 4 miles a day. This is the first large natural gas line to be laid in electrically welded pipe. The order was reported early in June as having been placed.

ALBERTA LEADS CANADA IN GAS PRODUCTION

(Continued from Page 64)

of wells have been drilled throughout this county, in the old gas fields; they number about 60 per year. The Townships of Dunn and South Cayuga have given the best results. An area along the line between these townships is apparently isolated from the remainder of the field, and gives some very good results. One well had a flow of slightly over 1,000,000 feet.

York County. A dry hole to the Precambrian was drilled on Lot 14, Con. 3, York Township. A small gas well was completed on Lot 64, Con. 1, Whitechurch Township. A small flow of gas was found at about 400 feet in the Trenton. The Trenton here is remarkably thin, about 520 feet, and the surface very deep. The surface deposits were 570 feet thick.

Peel County. A well was drilled on Lot 17, Con. I, Albion Township; it penetrated the Trenton a short distance when the hole was lost through the caving of the upper shales; the hole was full of water and it was not a good test.

The total production of natural gas in Canada during the six months ending June 30, 1927, was 11,347,648,000 cubic feet valued at $4,614,438, or an average of 40.6 cents per 1,000 cubic feet. Alberta in its role of principal producer accounted for 7,050,538,000 feet; Ontario followed with 3,889,150,000 feet, and New Brunswick was third with 407,860,000 feet. Average prices received per 1,000 feet were, by provinces: New Brunswick, 19 cents; Ontario, 65 cents and Alberta, 28 cents.

Little Gas Produced in Manitoba

The Province of Manitoba showed in 1926 a production of 200,000 feet valued at $60; and in the first six months of 1927 a production of 100,000 feet valued at $30. Imports of gas by pipe line into Canada were in 1926, 119,310,000 valued at $74,942, and in the first six months of 1927 were 71,519,000 feet valued at $44,583.

NORTH PENN LEASES LINE

OIL CITY, Pa., Sept. 24.—One of the 8-inch lines of the Northern Pipe Line Co. from Smethport to Knox, a distance of 75 miles, has been leased to the North Penn Gas Co. to transport natural gas to the Allegany Gas Co. which furnishes Elmira, Corning and other southern New York cities. This line is one of several parallel ones and was laid in 1905. It has been used as a part of the through system of the Northern Pipe Line Co. and was leased when the company had more capacity than it could make use of to handle its business.

W. L. MILLS DIES

Three weeks illness with typhoid fever ended in the death of W. L. Mills, about 24, geologist and scout for the Southern Crude Oil Purchasing Co., in the hospital at Pecos, Reeves County, Texas.

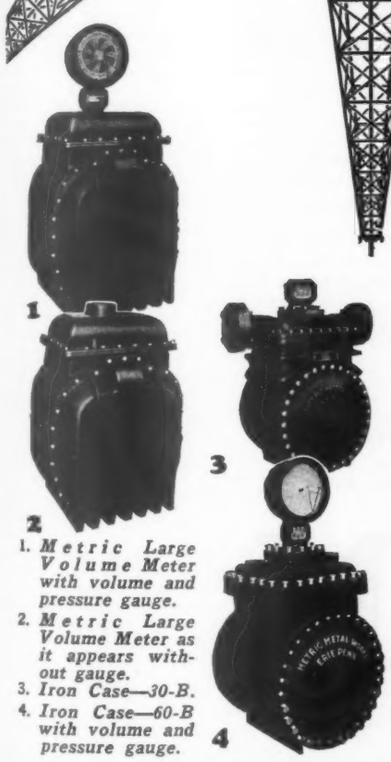
ADOPTS UNIFORM ACCOUNTING

NEW YORK, Sept. 24.—The Atlantic Refining Co. has adopted the uniform accounting plan approved by a committee of the American Petroleum Institute.

At the Center of Production

METRIC METERS

are at home among the derricks. They help to accurately tell the cost of drilling. They likewise accurately record the gas produced. Going or coming, there's a Metric Meter of design, size, weight, and capacity that "measures up"—whatever the job. Particularly valuable in the midst of gas production are the Metric Positive Large Volume Meters and Iron Case Meters.



1. *Metric Large Volume Meter with volume and pressure gauge.*
2. *Metric Large Volume Meter as it appears without gauge.*
3. *Iron Case—30-B.*
4. *Iron Case—60-B with volume and pressure gauge.*

Metrics

In the measurement of gas from the well—where the volume is large and the pressure high—the *Metric*, latest of the line of Metric Meters, and of largest capacity—will give just the kind of service for which such conditions call. There are two sizes: one known as the 2500 foot, the other as the 4000 foot. For over-loads: you can safely increase their measuring capacity to 4000 and 7500 cu. ft. per hour, respectively. The smaller Metric weighs only 400, the larger, only 675 pounds.

In their accuracy, their dependability and in the length of time they will perform they have the typically Metric Meter characteristics.

Iron Case

The name *Iron Case* Meter to the gas industry carries the same significance as when one refers to an *iron man* among men. It suggests extraordinary ability to do its work well under difficulty and with little suffering at the hands of time.

The two *Iron Case* meters here illustrated are especially adapted to the measurement of gas for drilling and pumping and other requirements about the lease. For these purposes they are used in large numbers that can only mean one thing—they pay! And tho reinstalled many times as each drilling job is completed—they continued to display their *iron man* qualities in their continued reliability for accurate measurement.

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Dallas Tulsa Los Angeles

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of the American Meter Company-Inc.

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Complete Refinery or Steel Field Buildings —Austin Service Covers Both

AUSTIN builds complete operating plants under a three-fold guarantee which covers:

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For steel field buildings, Austin has large stocks always available for immediate delivery, from its own fabricating mill. Austin is thus often able to deliver materials to the site for erection by your own crew or local builders before even the foundations are in place.

Austin guarantees results—and you get them—without bother, delay or shifting of responsibility. When you build the Austin way every detail is settled in advance. Construction proceeds true to schedule. The new plant is ready when you want it, at the price you expected to pay.

For plant projects of any size or field buildings of any type, it will pay you to get in touch with the nearest Austin office by phone, wire or the memo below.

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New York Cincinnati Pittsburgh St. Louis Chicago Philadelphia Seattle Portland Detroit Miami
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Complete Building Service

Memo to THE AUSTIN COMPANY, *Cleveland—* We are interested in a

_____ project containing _____ sq. ft. Send me a personal copy of "The Austin Book of Buildings." Individual _____

Firm _____ City _____

O&GJ 9-29-27

MANY PROBLEMS ARE INVOLVED IN MAKING LEASES ON LIFE ESTATES

By Brice T. Sutton
Attorney with The Prairie Oil & Gas Co.

In contact with lease men and oil operators it is noticed they usually shy away from leases when a life estate is involved. Not many seem to know just what to do in order to get a good lease on such property, and some have the mistaken idea that the holder of the life estate has the right to lease, and also is entitled to all rents and royalties so long as he lives.

Life estates in reality do not complicate a title so far as leases or operating for oil and gas are concerned, once the law applicable to them is understood. It is my purpose in this article to explain the law and the proper method for handling such estates.

A life estate is an interest in land, the enjoyment of which is limited to one's own life or to the life of someone else. Such interests in land are usually created by a will, but may be created by inserting such a limitation in a deed; or they may be created by inheritance laws of the state, such as the interest sometimes given a widow and her children in the husband's estate.

Not Permitted to Waste

The persons receiving the estate after the death of the life tenant are known in law as remaindermen. A general rule in regard to a life tenant, or holder of a life estate, is that he is not permitted to commit waste. In other words, he is permitted only to use and enjoy the land in the usual and customary way, and is not entitled to make any use of it that will materially decrease the value when, at the end of the life estate, it goes to the remaindermen. All minerals, including oil and gas, are considered a part of the body of the land and are not to be removed by the life tenant. It has been held that this is true even though the property is being drained by offset wells. The lease man is faced with this situation: The life tenant has the absolute right to possession of the surface to the exclusion of all others, and the remainderman is the owner of the minerals, as he is the owner of the body of the estate. But he cannot go in and operate the property as he does not have the right of possession. Neither party can operate or lease the land without the consent of the other. The only solution of the problem, of course, is for each to join in the execution of a lease, agreeing upon a division of the bonus, rents and profits. It is important that the lease clearly show an agreement between the life tenant and the remainderman as to just how all the proceeds are to be divided. Such agreement and understanding will save an infinite amount of trouble when profits accrue under the lease. The life tenant almost always expects to receive all the rents and profits, including royalty, so long as he lives. He considers these as income from the land the same as crop rent and profits. He is, of course, mistaken in this and then the trouble begins, if the lease shows no agreed division of profits.

Under the law, since the life tenant has no right to the minerals, he does not have the right to the rents or royalties from the lease. As he does own, however, a life estate in the minerals he is entitled to a life estate in the royalties. This means that he is only entitled to the interest which may accrue on the royalty money during his lifetime. The royalty money itself must be preserved for the remainderman. Unless the life tenant and the remainderman will accept a check payable to them jointly or agree upon a division of the profits, it is necessary that a trustee be appointed under the proper court procedure to receive the money and account to the life tenant and deliver the body of the estate to the remainderman at the death of the life tenant.

If the mineral rights have been separated from the surface rights, by deed or otherwise, and a person has been given a life estate in the minerals, he would, of course, then be permitted to develop or lease the property for oil and gas and be entitled to all the profits therefrom.

If Well Drilled Previously

It is generally conceded that a life tenant may work mines opened before the life estate commenced, and is entitled to all the profits from them. Therefore, if a well has been drilled on the property before the life estate starts the life tenant may produce from same and also drill other wells thereon necessary to fully develop the property. It is, however, generally conceded that he would not be permitted to produce from any sand except the one already developed. He could not drill new wells to a deeper horizon. If all wells on the property have been abandoned prior to the commencement of the life estate, and the former owner has shown an intention to put the land to other use, the life tenant is not permitted to reopen the wells and renew operations.

If there is a valid oil and gas lease on the land at the time the life estate begins and production is later obtained under such lease, the life tenant is entitled to all the royalty, rents and profits from such production no matter from what sand produced, unless the lease was limited by its terms to certain strata. If, however, this lease should expire under its own terms without having produced, the life tenant does not have the right to later develop the property or lease the same for oil and gas without the consent of the remainderman.

It has been held that where the life tenant or executor is given power of sale and power to lease, the rents and royalties go to the life tenant. The reason for this is that it is considered that the owner before his death dedicated his land to such use and that it was therefore his intention for the life tenant to have the income from that source.

Rights of Each

If the remainderman should go upon the land without the consent of the life tenant and produce oil, the production will not only belong to the life tenant, but he will also have the right to continue to operate the wells. On the contrary, if the life tenant drills wells without the consent of the remainderman, all oil or gas taken from the wells is the property of the remainderman.

There is one situation which sometimes arises in connection with life estates that is a little difficult to handle, and that is where it is impossible to tell who the remaindermen will be. In the event there is a possibility of the estate going to any number of persons after the life estate is terminated, the only way to safely distribute the rents and royalties is to proceed in the proper court to have a trustee appointed to receive the profits of the property, and to take charge of the entire estate. In the event it is desired to take a lease on property so situated, all interested parties, so far as known, should sign the lease and a trustee should be appointed by the property court to execute a lease for the undetermined remaindermen.

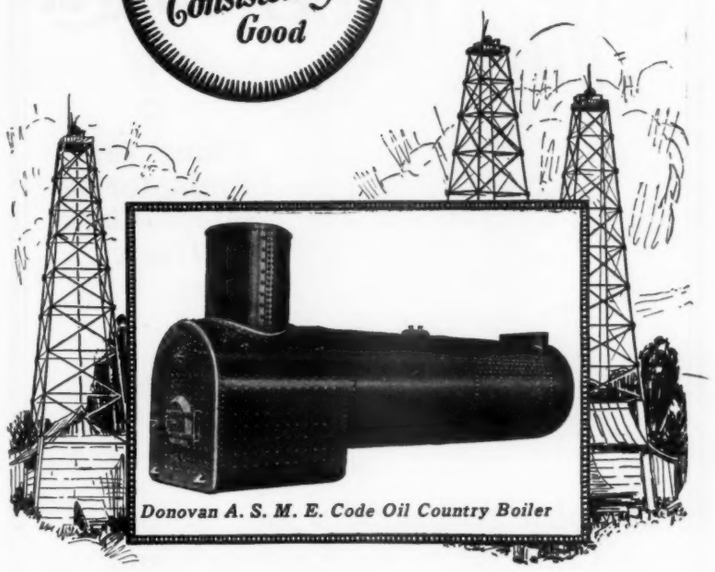
STUDENTS VISIT OIL FIELDS

A party of oil engineering students from the University of Birmingham, England, has again visited the oil fields during the summer vacation, and this summer the oil fields of Poland as well as those of Rumania, were included in the trip. The tour in Poland covered visits to wells in the course of drilling, the charcoal absorption plants, and ozokerite mines of Boryslaw.

FIRST PARAFFIN PLANT

The first paraffin plant in Russia has begun operations in Grozny. The output of this plant will be 1,000 poods of paraffin weekly. Simultaneously with the starting of operations of this plant, the importation of paraffin ceased.

Donovan Boilers are Consistently Good



Donovan A. S. M. E. Code Oil Country Boiler

They Stand the Test of Years

80 to 100 Wells Per Boiler

DONOVAN BOILER WORKS,
Parkersburg, W. Va.

Attention: Mr. Hugh Donovan, Jr.

Dear Mr. Donovan:

I purchased 2—25 H.P. boilers of yours in 1909 and wish to say these boilers have given wonderful service to say the least.

I have been using these boilers almost continually since that date, drilling wells in and about Ritchie and Doddridge counties and, while I do not have my records just at hand, I am satisfied these boilers have drilled 80 to 100 wells each. The wells were 2000′ to 2500′ deep. These boilers have drilled between 200,000′ and 300,000′ of hole each. The only repairs that have ever been made on either of these boilers was one new gas flue which you gave me and I put in myself.

From the above record of DONOVAN BOILERS, I can surely say that they give wonderful service.

Yours very truly,

(Signed) S. W. YOUNG.
Contractor.

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DONOVAN BOILER WORKS, INC.
PARKERSBURG, W. VA.

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All Leading Supply Houses Throughout the Eastern Fields Handle
DONOVAN QUALITY PRODUCTS
NONE BETTER

Complete Adjustment for Changed Wind Requires Only Five Seconds Time of One Man

All Adjustments Made From Ground

Note These Direct Advantages:

1. **Greatly Increased Effective Cooling Surface.**
2. **Decided Up-Circulation of Air, Improving Performance.**
3. **Reduced Size of Complete Tower.**
4. **Reduced Pumping Head, Saving Power.**
5. **Reduced Foundation Expense.**
6. **Reduced First Cost Per Gallon of Water.**
7. **Reduced Windage Loss, With Resultant Saving in Make-Up.**
8. **Elimination of Water Spray Nuisance.**

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Jackson Engineering & Equipment Company

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FLUOR REDWOOD COOLING TOWERS

WEST TEXAS CRUDE OIL STOCKS INCREASE 1,500,000 BBLS. IN AUGUST

By C. D. Lockwood

FORT WORTH, Tex., Sept. 24.—West Texas crude oil stocks increased more than 1,500,000 bbls. during the month of August while production increased nearly 1,000,000 bbls. over the output for July, and completed steel tankage capacity was more than 1,000,000 bbls. greater on September 1 than it was a month previous.

The total amount of crude oil contained in large storage tanks in West Texas September 1 was 6,367,271 bbls., compared with 4,792,554 bbls. August 1, a gain of 1,574,717 bbls.

The total output of wells in this district during August was 5,041,767 bbls., compared with 4,140,084 bbls. during July, an increase of 901,683 bbls.

The total capacity of steel storage tanks on the latter date amounted to 9,183,512 bbls., compared with 7,921,739 bbls. on August 1, a gain of 1,261,773 bbls. The large steel construction program now under way in this district will probably raise this figure to a greater extent during September than during any other month, and it is not improbable the total will be getting close to 11,000,000 bbls. by the first of next month. The Illinois Pipe Line Co. (Mid-Kansas Oil & Gas Co.) is erecting twenty-five 80,000-bbl. tanks on its farm 2 miles east of Del Rio in Valverde County, several of which are already completed and will figure in the totals October 1 or shortly thereafter. Magnolia Pipe Line Co. is also erecting ten 55,000-bbl. tanks on its farm near Midland and is preparing to build an 8-inch trunk line from Midland to De Leon in Comanche County where it will connect with Magnolia's main system. An 8-inch line from the Church-Fields Pool in Crane County to this Midland tank farm is already under construction.

Humble Pipe Line Co. is also building ten 55,000-bbl. containers in the Yates Pool and two 64,000-bbl tanks in the Hendricks Pool of Winkler County. Roxana Petroleum Corp. is building two 80,000-bbl. receptacles on its Tippett lease in the Yates Pool and Simms Oil Co. is reported to have made locations for two 55s in Section 103, Block 194 same pool. Other companies which own acreage regarded as almost certain to produce, will undoubtedly add to the program in the Yates Pool.

Tanks are still going up in the Church-Fields Pool, also. Simms Oil Co. is building five new 55s and the Atlantic Oil Producing Co. is adding two of the same size. Landreth Production Corp. has twelve 55s full, is actually building 10 more and plans to have 31 in all. Eastland Oil Co. & Collett have eight 55s and one 64,000-bbl. size completed and are erecting five additional 55s.

Gulf Leads Production

In production of oil, Gulf Production Co. maintained its position at the head of the West Texas list, a position gained last month when the Big Lake Oil Co. was displayed. Gulf's total was 750,000 bbls. while the Big Lake Oil Co. produced "only" 513,213 bbls. Simms Oil Co. and Atlantic Oil Producing Co. occupied third and fourth places, having 765,955 bbls. to their credit, jointly, or 382,977 bbls. each.

It is interesting to note that Gulf Production Co.'s output during July was 613,206 bbls., Big Lake Oil Co., 521,782 bbls., and Simms and Atlantic jointly, 521,303 bbls. August, and the latter part of July, witnessed some excellent new wells for Gulf and Simms & Atlantic, particularly in the Church-Fields Pool.

Landreth Production Corp. jumped to fifth place in the West Texas list during August, the famous 400 foot strip dividing the University and McElroy land in Crane County having produced 364,441 bbls. as compared with 170,881 bbls. during July. Eastland Oil Co. & Collett's 80 acres in the Church-Fields Pool also increased a little, making 351,069 bbls. in August as against 328,946 bbls. in July.

WEST TEXAS

PIPE LINE RUNS BY COUNTIES

Company—	Bbls.
Crane	1,928,516
Crockett	40,199
Ector	no P. L.
Glasscock	no P. L.
Howard	94,138
Jones	47,362
Loving	no P. L.
Mitchell	127,723
Pecos	129,868
Reagan	620,555
Scurry	no P. L.
Upton	572,543
Winkler	82,893
Total	3,643,697

PIPE LINE RUNS BY COMPANIES

Col-Tex P. L. Co.	221,861
Gulf P. L. Co.	643,993
Humble P. L. Co.	1,072,325
Illinois P. L. Co	129,868
Magnolia P. L. Co.	76,842
Marland P. L. Co.	123,922
Phil-Tex P. L. Co.	47,362
Reagan Co. Pur. Co.	620,455
Roxana P. L. Co. (by tank cars)	84,647
Southern P. L. Co. (by tank cars)	622,140
Texas P. L. Co.	144
Totals	3,643,697

STEEL STORAGE REPORT FOR WEST TEXAS

AUGUST, 1927

Company—Farm	Tanks No. & Size	Capacity	Stock	Room
CRANE COUNTY				
Eastland Oil Co., University	1-64,000			
	8-55,000			
	8-10,000			
	1- 5,000			
	5- 1,000			
	22- 500	605,000	350,250	254,750
Gulf P. L. Co., McElroy	2-80,000	160,000	87,279	72,721
Humble P. L. Co., University	4-55,000	221,708	213,074	8,634
	2-64,000	128,000	71,967	56,033
Landreth Prod. Corp., State-Cowden	12-55,000	660,000	538,050	121,950
Magnolia P. L. Co., University	4-55,000	220,000	178,204	41,796
Pecos Oil Co., University	2-55,000			
	1-37,500			
	10-10,000	247,500	204,891	42,609
Simms & Atlantic, University	12-55,000	660,000	554,382	105,618
Southern P. L. Co., University	1-25,000			
	2-10,000	45,000	.....	45,000
Totals, Crane County		2,947,208	2,198,097	749,111
CROCKETT COUNTY				
Humble P. L. Co., Powell	1-55,000	33,739	39,649	14,090
Kay County Gas, Powell	2 5,000	10,000	3,350	6,650
Totals, Crockett County		63,739	42,999	20,740
HOWARD COUNTY				
Kay County Gas, Coahoma	2-10,000	20,000	4,729	15,271
JONES COUNTY				
Phil-Tex P. L. Co., Noodle Creek	1-55,000	53,000	18,000	35,000
MIDLAND COUNTY				
Gulf P. L., fee	4-55,000			
	6-80,000	692,000	555,744	136,256
MITCHELL COUNTY				
Magnolia P. L. Co., Westbrook	5-55,000	275,000	242,243	32,757
PECOS COUNTY				
Illinois P. L. Co., Yates	4-55,000	220,000	96,566	123,434
REAGAN COUNTY				
Big Lake Oil Co., University	12-55,000			
	12- 1,000			
	2-10,000	692,000	488,160	203,840
Humble P. L. Co., Kemper	5-64,000			
Leased	6-80,000	950,000	769,611	180,389
Reagan Co. Pur. Co., Kemper	6-80,000	501,948	264,528	237,420
Texon O. & L. Co., University	9-55,000	495,000	.....	495,000
Marland P. L. Co., leased	2-80,000	160,000	82,640	77,360
Totals, Reagan County		2,798,948	1,604,939	1,194,009

Yount Specialties

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BEAUMONT IRON WORKS CO.
BEAUMONT, TEXAS
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Axelson Machine Co.
Sucker Rods, Pull Rods, Plunger Working Barrels (Pumps) etc.

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Oil Country Boilers and Tanks.

Frick-Reid Service Belting
Rubber Covered and Friction Surface.

Jensen Bros. Mfg. Co.
Pumping Jacks.

National Transit Pump and Machine Co.
Power and Steam Pumps.

J. P. Ratigan
Grips, Clamps, Beam Hangers.

Joseph Reid Gas Engine Company
Gas and Oil Engines, two and four-cycle, Band Wheel and Direct Drive Pumping Powers.

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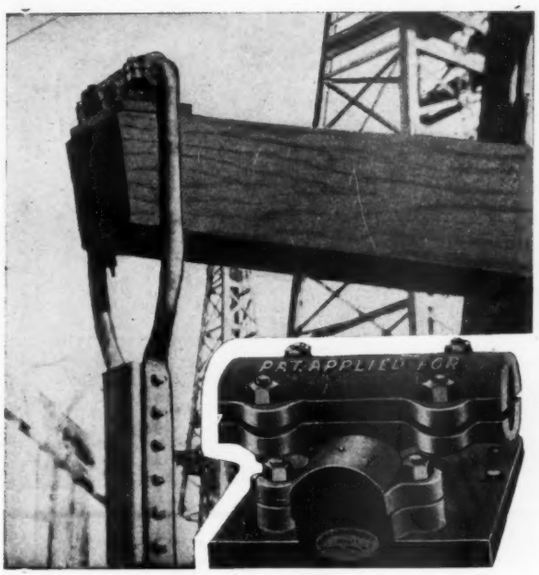
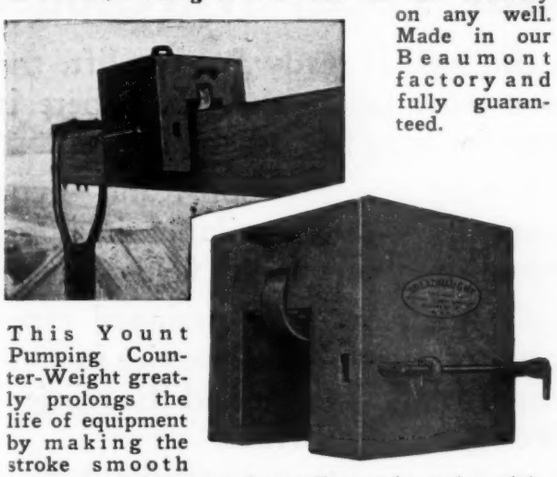


This Yount Oscillating Stirrup Bearing does away with wear from misalignment of walking beam or crank. On drilling wells it enables one man to engage or remove the pitman from the wrist pin without undue effort. It has the enthusiastic endorsement of practical field men everywhere. Easy to install, nothing to wear out. A real economy on any well. Made in our Beaumont factory and fully guaranteed.



This Yount Pumping Counter-Weight greatly prolongs the life of equipment by making the stroke smooth and even. It is mounted on rollers and may be quickly moved to any position on the beam. Easily rolled to the center and clamped there while pulling rods or tubing. Built for all walking beams. Weights from 3450 to 5650 pounds. Send for booklet describing these and other Yount Specialties.

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Eight Type XOB Compressors being installed on wooden sills at the Mary Killingsworth Lease of the Carter Oil Company.

Compressors Direct from Our Local Warehouse

When the well is ready for the lift, the Compressor must be on the job. There is seldom time for long freight shipments.

That is why the Ingersoll-Rand Type XOB Compressors are available in local warehouses throughout the oil fields.

These Compressors were designed especially for heavy-duty oil well service in connection with air and gas lift and the reinjection of air or gas into oil sands.

Ingersoll-Rand engineers will be glad to call on you or send further description of these units.

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Ingersoll-Rand

UPTON COUNTY				
Humble P. L. Co., Burleson	13-55,000	662,117	615,199	46,918
Marland P. L. Co., Burleson	6-80,000			
	4-55,000	700,000	660,912	39,088
Mid-Kansas P. L. Co., Union land	2-55,000	110,000	52,973	57,027
Texas P. L. Co., Union Land	1-37,500			
	1-64,000	101,500	4,665	96,835
Southern P. L. Co., Burleson	1-64,000			
	2-55,000	170,000	145,616	24,384
Texas Pacific, C. & O. Co., Lane	1-55,000	55,000	39,856	15,144
Totals, Upton County		1,798,617	1,519,221	279,396
WARD AND WINKLER COUNTIES				
Gulf Prod. Co., Hendricks	2-80,000	160,000	.....	160,000
Southern P. L. Co., Hendricks	2-55,000			
	2-10,000			
	1-25,000	155,000	84,733	70,267
Totals, Ward and Winkler Counties		315,000	84,733	230,267
Grand Total, West Texas		9,183,512	6,367,271	2,816,241

WEST TEXAS PRODUCTION AND PIPE LINE REPORT, AUGUST, 1927

CRANE COUNTY

Company, lease, wells—	Prod.	P. L. runs	
Church & Fields, University, 1	3,751	3,621	H. P. L.
Church & Fields, Duoil-University, 1	5,084	5,375	H. P. L.
Church & Weekley, University, 1, 2, 3	70,680	31,085	H. P. L.
Cromwell et al, University, 1 to 7 and 10, 11, 12	180,908	62,037	H. P. L.
Eastland Oil Co. and Collett, University, 1 to 8	344,904	155,051	H. P. L.
Gulf Prod. Co., Lassiter-State, 1 to 10	69,347	69,347	G. P. L.
Humble O. & R., University, 1 to 10	206,620	185,999	H. P. L.
Independent O. & G. Co., University-A, 1 and 2	31,535	32,219	So. P. L.
University-B, 1	38,979	38,054	So. P. L.
Independent total	70,532	70,273	So. P. L.
Landreth Prod. Co., State-Cowden-Anderson, 1 to 14	364,441	61,374	So. P. L.
Magnolia Pet. Co., Univ.-Church, 1 to 4	2,995	2,995	Mag. P. L.
Univ.-Hardwicke, 1 to 8	60,140	60,140	Mag. P. L.
Univ.-O'Keefe, 1 to 8	8,957	8,957	Mag. P. L.
Univ.-Lassiter, 1 to 3	3,334	3,334	Mag. P. L.
Magnolia Pet. Co. total	75,426	75,426	
Prairie O. & G. Co. University, 1 & 2	73,873	63,504	H. P. L.
University-A, 1 to 6	3,696	830	H. P. L.
Prairie O. & G. Co. total	77,569	64,334	
Simms & Atlantis Univ.-A, 1 to 8	200,245	52,724	H. P. L.
Univ.-B, 1	1,972	2,106	H. P. L.
Univ.-C, 1 to 6	456,577	145,856	H. P. L.
Univ.-D, 1 to 5	98,494	98,794	H. P. L.
Univ.-E, 1	8,667	8,950	H. P. L.
Simms & Atlantic, total	765,955	308,430	
Stidham & Thrasher, University, 1	279	.....	H. P. L.
Tidal Oil Co., Univ.-B, 1	1,430	.....	Farm storage
Univ.-B, 2	789	2,221	So. P. L.
Univ.-C, 1	1,056	1,056	Mag. P. L.
Univ.-E, 1	3,126	3,047	So. P. L.
Univ.-F, 1 to 6	169,871	179,265	So. P. L.
Univ.-G, 1 & 2	955	2,086	So. P. L.
Univ.-H, 1 & 2	1,445	1,559	So. P. L.
Univ.-I, 1 & 2	18,945	19,279	So. P. L.
Tidal Oil Co., totals	197,617	208,513	
The Texas Company, University, 1 & 2	8,432	8,357	So. P. L.
Totals, Church-Fields Pool	2,441,546	1,309,222	

McCAMEY-TAYLOR POOL, CRANE COUNTY

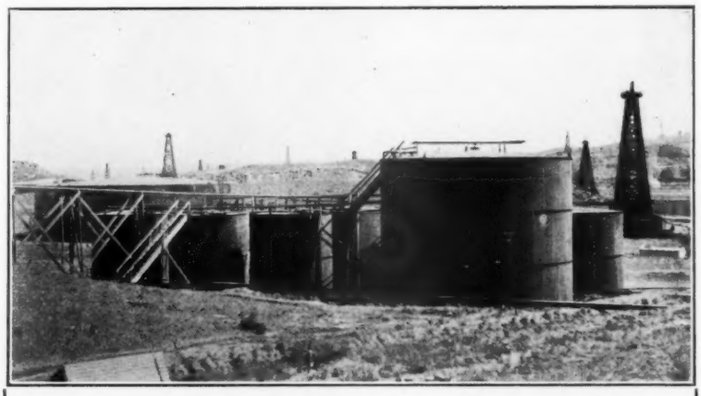
Independent O. & G., Bryant-Moore, 1	207	205	So. P. L.
McMan O. & G. Co., Hughes, 1 & 2	2,728	2,413	H. P. L.
Marland Oil Co., Cowden-A, 1, 2, 3	1,415	.....	
Cowden-B, 1	2,725	4,305	M. P. L.
Durham, 1, 2	168	168	Farm storage
Hughes-C, 1, 2, 3	1,384	1,159	M. P. L.
Hughes-D, 1 to 6	20,445	20,556	M. P. L.
Hughes-Gibbs, 1, 2	790	774	M. P. L.
Zoch-Hughes, 1, 2, 3	5,803	5,572	M. P. L.
Gibbs, 1 & 2	4,655	764	M. P. L.
Shirley, 1 to 4	8,315	8,900	M. P. L.
Shirley-A, 1	300	.....	
Marland Oil Co., total	46,000	42,030	M. P. L.
Total McCamey-Taylor Field	48,935	44,648	

CROCKETT COUNTY—POWELL FIELD

Cromwell, Carl Powell, 1, 2, 3, 5	4,185	3,666	M. P. L.
Gulf Prod. Co., Powell-A, 1 to 5	992	1,194	H. P. L.
Powell-D, 1	2,046	1,993	H. P. L.
Gulf Prod. Co., total	3,038	3,187	H. P. L.
Hughes, J. K., Powell-A, 1, 2, 3	5,611	5,175	H. P. L.
Powell-B, 1	1,116	795	H. P. L.
Hughes, J. K., total	6,727	5,970	H. P. L.
Humble & Marland, Powell, 1 to 10	7,949	3,815	H. P. L.
Powell-B, 1	2,133	1,241	H. P. L.
Humble & Marland, total	10,078	8,154	
Humble O. & R. Co., Sarg, 1	86	127	H. P. L.
Republic Prod. Co., Powell, 1 & 2	6,167	4,634	H. P. L.
Roxana Pet. Corp., Powell, 1 & 2	353	346	M. P. L.
Williams, P. H., Powell, 1	13,516	14,115	H. P. L.
Grand Total, Crockett County	44,150	40,199	

HOWARD COUNTY—CHALK FIELD

Comet Pet. Co., Clay, 1 & 2	336	336	Farm storage
Dixie Oil Co., Clay, 1	214	214	Farm storage
F. H. E. Oil Co., Roberts, 1	2,697	2,697	Farm storage
Gulf Prod. Co., Chalk, 2, 3	326	326	Col-Tex.
Godley Oil Co., Hooks, 1	3,945	3,945	Col-Tex.
Humble O. & R., Douthitt, 1 & 2	1,271	1,271	Col-Tex.
Lockhart & Co., Chalk, 1, 2, 3	2,323	.....	
Chalk-A, 1, 2, 3	2,599	.....	
Scott-Hyman, 1	115	.....	
Lockhart & Co., total	5,037	5,037	Tank car to El Paso, Tex.
Magnolia Pet. Co., Chalk, G. O., 1 to 4, 6 & 7	5,302	.....	
Owen-Chalk, 1 to 4 & 6 to 8	5,038	.....	
Mary Chalk, 1 to 5	8,489	.....	
Kelley-Chalk, 1, 3, 4, 5, 6	5,374	.....	
Sloan Chalk, 1 to 4	3,066	.....	
Hyman Chalk, 1 & 2	1,048	.....	
Sarah Hymen, 1 & 2	1,178	.....	
O'Daniels 1	260	.....	
Magnolia Pet. Co., total	29,755	29,755	Col-Tex.
Marland Oil Co., Clay, 1 to 5	9,027	9,027	Col-Tex.
Clay-A, 1 to 5	8,378	8,378	Col-Tex.
Clay-B, 1	676	676	Col-Tex.
G. O. Chalk, 1 to 8 & 10 & 11	6,729	6,729	Col-Tex.
G. O. Chalk-A, 1 to 8	6,721	.....	
G. O. Chalk-B, 1	1,343	1,343	Col-Tex.
G. O. Chalk-C, 1	647	647	Col-Tex.
G. O. Chalk-D, 1	1,109	1,109	Col-Tex.
G. O. Chalk-E, 1	4,161	4,161	Col-Tex.
Marland Oil Co., total	39,237	39,237	Col-Tex.
Merrick & Bristow, Hooks, 1, 2, 3	4,092	4,092	Col-Tex.
Midwest Explor. Co., Clay, 1 & 2	1,209	1,209	Col-Tex.
Owen & Sloan, Roberts, 1	675	675	Farm storage
Pure Oil Co., Chalk, 1, 2, 3	7,781	7,781	
Reeves & Apperman, Clay, 1	Off	.....	
Tidal Oil Co., Chalk, 1 & 2	1,482	1,482	Col-Tex.
Grand total Chalk Field	98,060	98,060	



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M'ELROY FIELD, CRANE COUNTY

Company, lease, wells—	Prod.	P. L. runs	
Gulf Prod. Co., Crier-McElroy, 1 to 6	35,167	35,167	G. P. L.
Crier-McElroy-A, 1 to 4	45,714	45,714	G. P. L.
J. T. McElroy, 1 to 33	491,394	491,394	G. P. L.
J. T. McElroy-B, 1	2,371	2,371	G. P. L.
Gulf Prod. Co., total	574,646	574,646	G. P. L.

WADDELL FIELD, CRANE COUNTY

Gulf Prod Co., Waddell, 1	837	837	Farm storage
Grand total, Crane County	3,065,964	1,929,353	

ECTOR COUNTY

Cosden, J. S., and The Texas Co., Connell-A, 1, 2, 3	515	515	Farm storage

GLASSCOCK COUNTY

Texon & Marland, Settles, 1, 2	1,176	1,176	Farm storage

HARDING FIELD

Marland & Texon, Harding, 1	892	892	Farm storage
Grand total Howard County	98,952	.....	

JONES COUNTY—NOODLE CREEK FIELD

Atlantic O. P. Co., Howell, 1	117	117	Phil-Tex.
Marland Oil Co., Mason, 1, 2, 3	11,672	11,672	Phil-Tex.
Midwest Explor. Co., Thornton, 1, 2, 3, 4	6,434	6,434	Phil-Tex.
Phillips Pet. Co., Beasley, 1	2,302	.....	
Mason, 1	4,540	.....	
Tessie, 1 to 4	9,761	.....	
Winters, 1, 2, 4	9,864	.....	
Vestal, 1	2,672	.....	
Phillips Pet. Co., total	29,139	29,139	Phil-Tex.
Grand total Jones County	47,362	47,362	Phil-Tex.

LOVING COUNTY

Lockhart & Co., Allen, 1	733	733	Farm storage
P. V. Pet. Co., Wheat, 1	68	68	Farm storage
Total Loving County	801	801	

MITCHELL COUNTY—WESTBROOK AND IATAN FIELD

Atlantic O. P. Co., Ricker, 1 to 7	7,433	7,177	
Eastland Oil Co., Adams 1, 1	1,784	.....	Col-Tex.
Clark, 1	387	.....	
Elder, 1	943	.....	
Handley, 1	362	.....	
Keynard, 1 to 4	2,689	.....	
Eastland Oil Co., total	6,165	6,165	
Magnolia Pet. Co., C. M. Adams, 1 to 8	9,630	9,630	Farm storage
F. Adams, 1 to 4	4,606	4,606	Col-Tex.
Baggett, 1	226	226	Col-Tex.
Coleman, 1	75	75	Col-Tex.
M. Foster, 1 to 4	2,688	2,688	Col-Tex.
O'Neil, 1	310	310	Col-Tex.
A. P. Watson, 1	180	180	Col-Tex.
W. W. Watson, 1	641	641	Col-Tex.
G. W. Womack, 1	476	476	Col-Tex.
Magnolia Pet. Co. total	18,831	18,831	
Morrison & Thompson, Morrison, 1	750	750	Col-Tex.
California Co., Abrams, 1 to 10	6,639	7,214	Col-Tex.
Abrams, Lse. 2, 1 to 5	5,924	6,256	Col-Tex.
Abrams, Lse. 3, 1, 2, 3	3,839	4,682	Col-Tex.
Butler, Lse. 1, 1, 2	641	443	Col-Tex.
Clark, Lse. 2, 1	949	1,219	Col-Tex.
Elder, Lse. 1, 1	446	527	Col-Tex.
Elder, Lse. 2, 1 to 5	5,565	8,757	Col-Tex.
W. L. Foster, 1, 2, 3	6,066	6,877	Col-Tex.
Doc Handley, 1	1,125	1,212	Col-Tex.
LeSure, Lse. 1, 1 & 2	967	930	Col-Tex.
A. L. Miller, 1 to 6	3,470	3,516	Col-Tex.
H. C. Miller, 1 to 9	9,133	10,432	Col-Tex.
J. D. Petitfils, Lse. 1, 1, 2, 3	5,111	5,502	Col-Tex.
J. D. Petitfils, Lse. 2, 1 to 4	3,595	4,348	Col-Tex.
Mo. State Life, 1	868	1,243	Col-Tex.
E. Morrison, Lse. 2, 2 to 18	10,380	10,980	Col-Tex.
Z. Morrison, 1	574	332	Col-Tex.
O. Handley, 1 to 4	5,001	5,804	Col-Tex.
Smart, 1 to 7	3,193	3,950	Col-Tex.
Swenson, 1 & 2	2,280	2,678	Col-Tex.
Womack, 1 to 8	7,792	7,862	Col-Tex.
California Co. total	83,558	93,823	Col-Tex.
Tidal Oil Co., Baggett, 1	445	.....	
Handley, 1	532	.....	
Tidal Oil Co. total	977	977	Col-Tex.
Grand total Mitchell County	117,714	127,723	

PECOS COUNTY—YATES POOL

Allsman & Bell, River Bed, 1	4,309	4,342	Ill. P. L.
Marland Oil Co., Yates-A, 1	5,003	4,021	Ill. P. L.
Marland & McMan, Yates, 1	5,485	7,596	Ill. P. L.
Mid-Kansas & Transcontinental, Smith-Taylor, 1	15,673	15,456	Ill. P. L.
Yates, 1 to 7	74,780	72,363	Ill. P. L.
Yates-B, 1, 2, 3	41,447	4,403	Ill. P. L.
Yates-C, 1	9,714	9,532	Ill. P. L.
Mid-Kansas & Trans., total	141,614	102,754	Ill. P. L.
Texon O. & L. Co., Yates, 1, 2	274	274	Farm storage
The California Co., Yates, 1	22,205	10,755	Ill. P. L.
Grand total Pecos County	178,890	129,868	Ill. P. L.

REAGAN COUNTY—BIG LAKE FIELD

Big Lake Oil Co., University, 110 wells	513,213	435,226	Reagan C. P. C.
Texon O. & L. Co., University, 81 wells	185,229	185,229	Reagan C. P. C.
Grand total Reagan County	698,432	620,455	

SCURRY COUNTY—IRA FIELD

Northwest Oil Co., Newman, 1	217	217	
Moore, 1 & 2	558	558	
Wellborn, 1	341	341	
Grand total Scurry County	1,116	1,116	Farm storage

UPTON COUNTY—M'CAMEY-TAYLOR FIELD

Amerada Pet. Corp., Hughes, 1 to 6	10,167	10,167	M. P. L.
Atlantic O. P. Co., Sherk, 1	1,247	1,230	H. P. L.
Bryant, et al, Baker, 1 & 2	1,922	1,749	H. P. L.
Champlin O. & R. Co., Lane, 1	4,762	387	So. P. L.
Dixie Oil Co., Burleson, 1 & 2	103	.....	
Burleson 3 & 4	110	.....	
Burleson, 5, 6, 8	568	.....	
Burleson, 7 & 13	220	.....	
Burleson, 11, 14, 20, 26	7,860	.....	
Burleson, 15 to 18, 21, 22, 23	51,854	.....	
Burleson, 19	4,951	.....	
Burleson, 24	1,142	.....	
Burleson, 25 & 27	23,376	.....	
	87,223	82,695	So. P. L.
Hughes, 1 to 3 & 5 & 7 to 12	6,815	5,788	So. P. L.
Dixie Oil Co. total	94,038	.....	
Gulf Prod. Co., Baker-B, 1 & 2	2,212	2,313	M. P. L.
Estep, 1 & 2	7,632	7,544	H. P. L.
Hughes, 1, 3, 4	1,872	1,836	H. P. L.
Hughes-B, 1, 2	1,057	1,007	H. P. L.
Lane-C, 1	4,136	4,044	H. P. L.
Lane, 1, 2, 3, 4 & 6	60,573	66,971	H. P. L.
Sherk, 1	1,462	1,394	H. P. L.
Gulf Prod. Co., total	86,944	85,109	
Humble O. & R. Co., Burleson, 1 to 4	965	979	H. P. L.
Ricker, 1, 2, 4, 5	24,593	24,569	H. P. L.
Humble O. & R. Co., total	25,548	25,548	H. P. L.
Independent O. & G., Burleson, 1 to 7	1,503	1,507	So. P. L.
Taylor 1, 3, 4, 5, 6, 9, 10, 13, 48, 60, 72, 94	10,646	10,664	So. P. L.
Wooley 2, 4, 5, 6, 7, 8, 12, 13 & 14	16,892	15,679	So. P. L.
Independent O. & G. Co., total	29,041	27,750	So. P. L.

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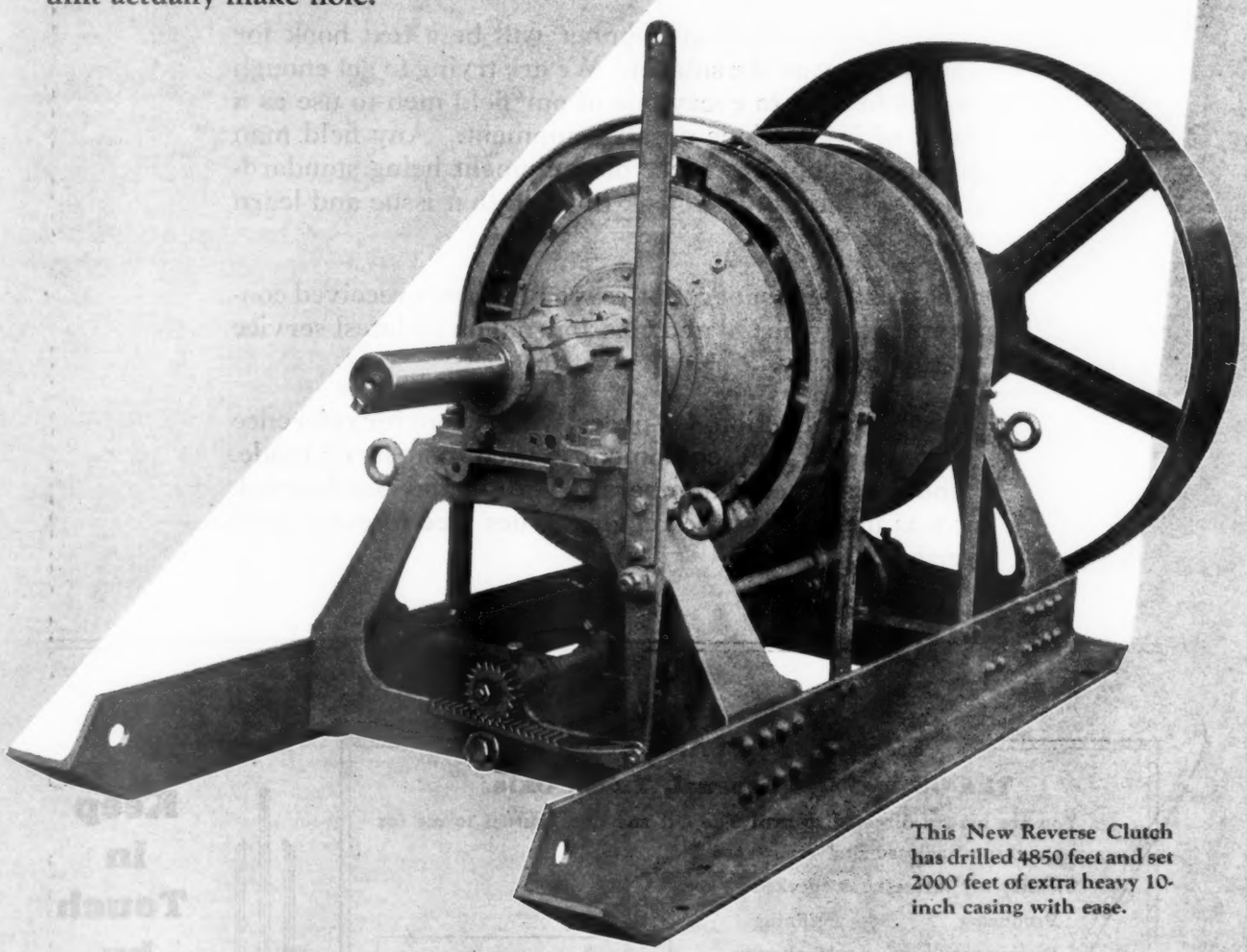

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Company, lease, wells—	Prod.	P. L. runs	
McMan O. & G. Co., Baker, 1	1,006	923	H. P. L.
Baker-A, 1	61	52	M. P. L.
McMan O. & G. Co., total	1,067	975	
Marland Oil Co., Baker-A, 1	573	376	M. P. L.
Burleson, 4 to 33	21,465	21,414	M. P. L.
Burleson-A, 1	218	150	M. P. L.
Burleson-B, 1	112	.....	
Powell, 1 to 4	6,475	6,849	M. P. L.
Estep, 1, 3, 5, 6, 7, 9, 10, 12	20,920	15,040	M. P. L.
Sanger, 1, 3, 4 & 6 to 20	12,107	12,845	M. P. L.
Marland Oil Co. total	61,870	56,673	M. P. L.
Prairie O. & G. Co., Allie Lane, 1 to 4	13,285	12,521	H. P. L.
		764	So. P. L.
J. Lane, 1 to 4	22,823	17,267	So. P. L.
		5,556	H. P. L.
Prairie O. & G. Co. total	36,108	36,108	
Pure Oil Co., Lane, 1	2,540	2,310	H. P. L.
Republic Prod. Co., Baker, 1 to 6	4,184	3,568	M. P. L.
Roxana Pet. Corp., Bowen, 1 to 26	73,125	73,125	Roxana
Estep, 1, 2, 3	1,710	1,710	Roxana
Hughes, 1, 2, 4, 6, 7, 8, 9 & 10	9,839	9,839	Roxana
Roxana Pet. Corp. total	84,674	84,674	Roxana
Simms Oil Co., Shirley, 1, 2, 3	2,767	2,885	H. P. L.
Snowden & McSweeney, Hughes, 1	3,823	3,743	H. P. L.
Sun Oil Co., Baker, 1 & 2	2,032	2,146	H. P. L.
Burleson, 1 to 8	5,833	5,846	H. P. L.
Sun Oil Co. total	7,865	7,992	H. P. L.
Texas Pacific C. & O. Co., Lane-A, 1 to 9 & 10	88,500	70,501	H. P. L.
Lane-B, 1	865	1,006	H. P. L.
Sherk, 1 to 5	3,565	3,395	H. P. L.
Texas Pacific C. & O. Co. total	92,930	74,903	H. P. L.
The Texas Company, Burleson, 1, 2, 3, 4	1,320	1,240	M. P. L.
King, 1 to 24	21,632	20,564	So. P. L.
Perry, 1 & 2	33,126	32,998	So. P. L.
Union Land, 1	144	144	Tex. P. L.
The Texas Company, total	56,222	54,946	
Texon O. & L. Co., Sherk, 1	438	420	H. P. L.
Tidal Oil Co., Burleson, 1	125	.....	Storage
Hughes, 1	3,290	3,099	So. P. L.
Tidal Oil Co. total	3,415	3,099	So. P. L.
Wentz Oil Corp., Sherk, 1, 2, 4	3,783	3,727	H. P. L.
White Eagle O. & R. Co., Hughes, 1	392	382	So. P. L.
Grand total Upton County	706,647	572,543	
WINKLER COUNTY			
Gulf Prod. Co., Hendricks, 1	17,911	17,911	So. P. L.
Independent O. & G. Co., Hendricks, 1	1,240	1,127	So. P. L.
Southern Crude O. P. Co., Hendricks T-67, 1-A-1	3,324	3,324	So. P. L.
Hendricks T-67, 1-C-1 & 1-C-2	23,196	23,196	So. P. L.
Hendricks T-88, 1-A-1	18,890	18,890	So. P. L.
Southern Crude O. P. Co. total	45,410	45,410	So. P. L.
Pure Oil Co., T. G. Hendricks, 1	18,332	18,332	So. P. L.
Grand total Winkler County	82,893	82,893	So. P. L.

TOTAL PRODUCTION BY COMPANIES

Company	Bbls.
Allsman & Bell	4,309
Amarada Pet. Corp.	10,167
Atlantic O. P. Co.	8,797
Big Lake Oil Co.	513,213
M. D. Bryant, et al	1,922
Champlin O. & R. Co.	4,762
Church & Fields	8,835
Church & Weekley	70,680
Comet Pet. Co.	336
Cosden & The Texas Co.	515
Cromwell, Carl	4,185
Cromwell, et al (Pecos Oil)	180,908
Dixie Oil Co.	94,252
Eastland Oil Co.	351,069
F. H. E. Oil Co.	2,697
Gulf Prod. Co.	750,011
Godley Oil & Gas Co.	3,945
Humble O. & R. Co.	238,564
Independent O. & G. Co.	101,020
Hughes, J. K., Dev. Co.	6,727
Landreth Prod. Co.	364,441
Lockhart Bros.	5,773
Magnolia Pet. Co.	124,012
Marland Oil Co.	172,805
McMan O. & G. Co.	6,527
Merrick & Bristow	4,092
Mid-Kansas & Transcont.	141,614
Midwest Explor. Co.	7,643
Morrison & Thompson	750
Northwest Oil Co.	1,113
Owens & Sloan	675
Prairie O. & G. Co.	113,677
Phillips Pet. Co.	29,139
Pure Oil Co.	28,753
Republic Prod. Co.	8,259
Roxana Pet. Corp.	85,027
Sun Oil Co.	7,865
Simms & Atlantic	765,955
Simms Oil Co.	2,767
Stidham & Thrasher	279
Snowden & McSweeney	3,823
Southern Crude O. P. Co.	45,410
Texas Pacific C. & O. Co.	92,930
Texon O. & L. Co.	208,746
The California Co.	108,763
The Texas Co.	64,654
Tidal Oil Co.	202,009
Wentz Oil Corp.	3,783
White Eagle O. & R. Co.	392
Williams, P. H.	13,516

TOTAL PRODUCTION BY FIELDS

Field, County—	Bbls.
Big Lake, Reagan	698,432
Chalk, Howard	98,060
Church-Fields, Crane	2,441,546
Connell, Ector	515
Hendricks, Winkler	82,893
McCamey-Taylor, Upton-Crane	755,582
McElroy, Crane	574,646
Noodle Creek, Jones	47,362
Powell, Crockett	44,150
Settles, Glasscock	1,176
Westbrook and Iatan, Mitchell	117,714
Wheat, Loving	801
Yates, Pecos	178,890
Grand total, August	5,041,767
Total, July	4,140,084
Increase	901,683

CALIFORNIA RECEIPTS AND PETROLEUM IMPORTS

Imports of crude and refined oils at the principal United States ports for the week ended September 17 totaled 1,451,000 bbls., a daily average of 207,286 bbls., compared with 1,301,000 bbls., a daily average of 185,857 bbls., for the week ended September 10 and a daily average of 200,000 bbls. for the four weeks ended September 17.

At Atlantic Coast Ports—	
Baltimore	.....
Boston	50,000
New York	888,000
Phialdelphia	76,000
Others	309,000
Total	1,323,000
Daily average	189,000
At Gulf Coast Ports—	
Galveston district	40,000
New Orleans and Baton Rouge	.....
Port Arthur and Sabine district	.....
Tampa	88,000
Total	128,000
Daily average	18,286
At All United States Ports—	
Total	1,451,000
Daily average	207,286
Daily average four weeks ended	200,000

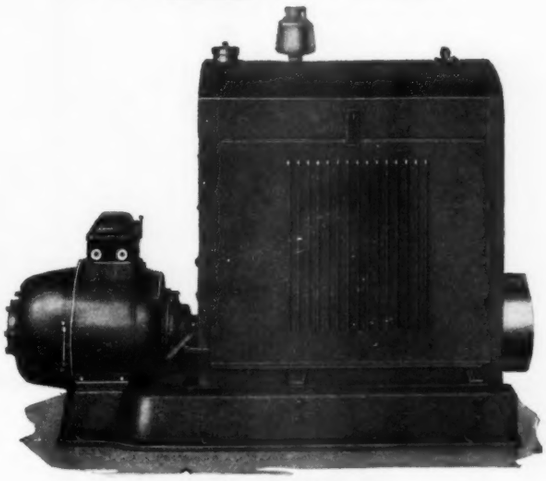
Receipts of California crude and refined oils at Atlantic and Gulf Coast ports for the week ended September 17 totaled 817,000 bbls., a daily average of 116,714 bbls., against 808,000 bbls., a daily average of 115,429 bbls., for the week ended September 10 and a daily average of 111,321 bbls. for the four weeks ended September 17.

At Atlantic Coast Ports—	
Baltimore	155,000
Boston	.....
New York	375,000
Philadelphia	60,000
Others	227,000
Total	817,000
Daily average	116,714
At Gulf Coast Ports—None.	
Daily average	.....
Total Atlantic and Gulf Coast ports.	817,000
Daily average	116,714
Daily average four weeks ended	111,321
Distribution of total California receipts is as follows:	
Crude	303,000
Gasoline	385,000
Gas oils	70,000
Fuel oils	59,000
Lubricants	.....
Total	817,000

COLOMBIA OIL LEGISLATION

According to a bill presented to the Colombian Congress holders of leases under titles previous to October 18, 1873, are required to file with the government maps and data showing progress of explorations. Royalty to the state is placed at 20 per cent of the gross production. Applications for exploration and exploitation contracts pending in the Ministry of Industries, are declared in suspense while the government investigated the amount of the country's oil resources.

HERE'S SOME NEW LIGHT ON AN OLD SUBJECT



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GAS-ELECTRIC LIGHTING PLANT
Capacities—1½, 2¼, 3 and 4 KW

The New MOON Gas-Electric Lighting Plant is ready to give you some brand new ideas on that old problem—rig and oil country lighting.

Here you have a self-contained lighting plant, specially designed for Oil Country use and containing many unique features which will meet your requirements from every angle.

Extremely flexible to handle all phases of your work—rugged enough to stand up under hard service—simple to operate and maintain—absolutely dependable in performance—it represents the last word in Oil Country lighting equipment.

Bulletin No. 15 will throw some interesting light on the subject. Ask your Supply Store for it, or write us.

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"I've never broken one yet!"

Pride of accomplishment shows itself in many ways.

This workman, when asked if the parts of Ford Tribloc Chain Hoists withstood the hammering and driving incident to renewing load chains, remarked "I've never broken one yet!" With that he brought his 2-pound hammer down on the internal gear with all the strength in his sinewy arm. Nothing happened, except that the hammer made a slight dent in the surface.

Ford Tribloc Chain Hoists are made to such high standards in every detail—from the selection of the metal to the final tests of the finished hoists—that thousands of Triblocs have been bought for the use of each of many large corporations.

And because these large purchases are based on something besides mere opinion, you may be sure that such hoists as these are sure to give gratifying results in your work.

Cost more to make Cost less to use !

Send for Catalog 7-B.

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2nd and Diamond Sts., Philadelphia, Pa.

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CHAIN HOIST

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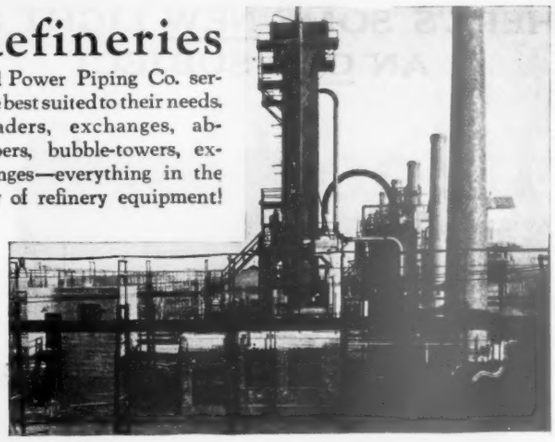
find Power Piping Co. service best suited to their needs. Headers, exchanges, absorbers, bubble-towers, exchanges—everything in the way of refinery equipment!



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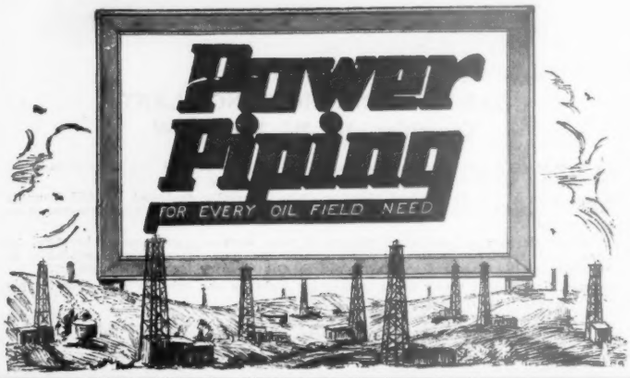

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METHODS OF REFINING SHALE OIL BEING STUDIED IN LABORATORIES

WASHINGTON, D. C., Sept. 24.—Following the recent closing down of the experimental oil shale plant of the United States Bureau of Mines, Department of Commerce, near Rulison, Colo., studies of the best methods of refining shale oil are being made at a number of institutions. Two 6,000-gallon tank cars of shale oil produced at the plant have been shipped to the League Island testing plant of the Navy Department, where tests will be made to determine the suitability of raw shale oil as fuel for naval vessels. This represents the first tank car lot shipment of shale oil made on the North American continent. Approximately 150 bbls. of the oil produced were sent to the Boulder, Colo., laboratory of the United States Bureau of Mines, where studies are being made in a $10,000 experimental refinery erected by the State of Colorado. A total of about 100 bbls. of shale oil has been shipped to a number of oil refineries and laboratories, where studies will be made to determine the best methods for refining this oil. The results of these investigations will be made known to the Bureau of Mines. The experimental plant was shut down on June 30, due to the failure of the Second Deficiency Bill, which contained an item of $70,000 for continued operation of the plant.

Future Sources of Oil

The experimental oil shale plant was built as the result of the recommendation of the President's Naval Oil Reserve Committee that information be obtained as to the value of the naval oil shale reserves as future sources of oil for the Navy, especially in time of national emergency. The oil shale plant was designed particularly for the purpose of determining fundamental principles that should be followed in extracting oil from oil shale. It was believed that by building a semicommercial plant, so far as possible of time-tried units, and making use of the data obtained by the Bureau of Mines in laboratory study of oil shale extending over a period of several years, it would be possible to determine the quality and quantity of oil that could be obtained in an emergency and to obtain information that would be of value to an oil shale industry of the future.

An appropriation of $90 000 for this work became available on March 3, 1925, and an additional appropriation of $89,000 became available on July 1, 1926, to take care of plant operations during the fiscal year ended June 30, 1927. As soon as the first appropriation was made, a site was selected for the retorting plant on Naval Oil Shale Reserve No. 3. A site for the mine was selected on Naval Oil Shale Reserve No. 1, adjoining Reserve No. 3. Before construction work could be started, it was necessary to build a road from the highway near Rulison, Colo., to the plant site, a distance of approximately 1½ miles and to construct a trail up the side of the mountain from the plant to the mine site, a distance of approximately 3 miles. The road was built by Garfield County, Colorado, and the cost of the trail was borne by the State of Colorado.

Gavin Sent to Scotland

Shortly after the original appropriation became available, M. J. Gavin, engineer in charge of the oil shale work of the bureau, was sent to Scotland and France, where he made a study of the methods that have been followed in extracting oil from shale for a long period. While in Scotland, Mr. Gavin purchased a Pumpherston retort, the type of retort that has been used in Scotland and which is the result of over 70 years' practical experience in oil shale retorting. This retort was shipped to the United States and erected at the plant site under the supervision of an expert construction man who was brought from Scotland for that purpose. The work of erecting this retort and auxiliary equipment was started in November, 1925, and completed in the spring of 1926. Another retort, the N-T-U, using quite different principles and of American design, was also purchased out of the original appropriation of $90,000 and the work of setting it up on the plant site was completed in December, 1926. The two retorts form a good combination for experimental studies in that the Pumpherston retort exemplifies slow distillation and the N-T-U retort rapid distillation. In addition to the two retorts and auxiliary equipment, the experimental plant consists of a water supply system which pumps water from the Colorado River, about 1½ miles from the plant, two 35-horsepower boilers, a 40-horsepower gas producer, a 5 K.W. turbo-generator for plant lighting and laboratory power, two 250-bbl. storage tanks, six 25-bbl. receiving tanks, a small pipe still for recovering scrubber naphtha, machine shop, control laboratory, temporary office building, and temporary quarters for plant employes. A 5,600-foot aerial tramway was constructed for transporting the shale from the mine to the retorting plant. Other equipment includes a crusher, gasoline engines, mine cars, mine scales, air compressor, rock drills, etc.

First Run Last Year

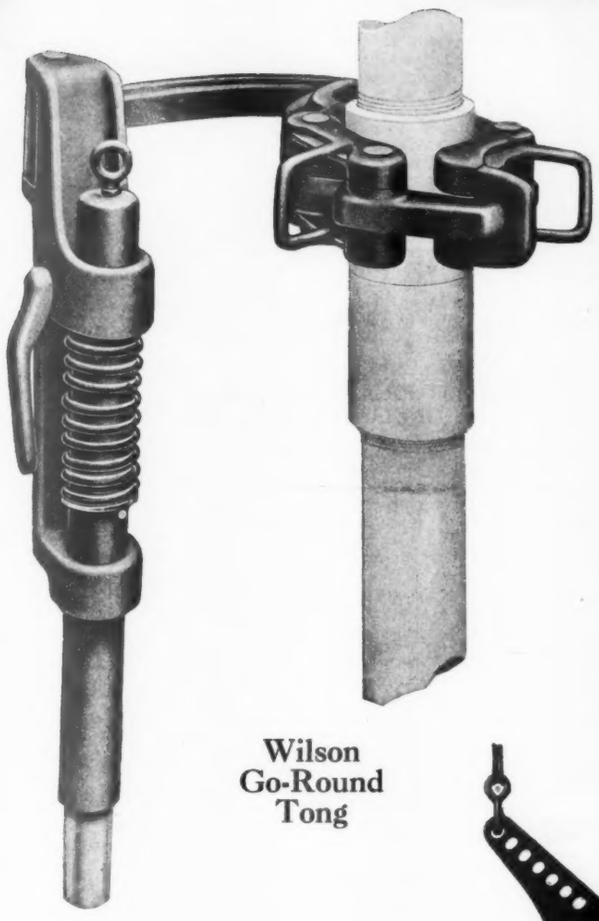
After preliminary heating extending over a period of about three months to thoroughly dry the retort and settings, the first run on the Pumpherston retort was started on September 17, 1926. This retort was operated continuously from that date until midnight of June 30, 1927, with the exception of a few weeks during the months of November and December, when difficulties were encountered in keeping the tramway in operation, and for brief periods of a few hours each during the remainder of the time when it became necessary to shut down the retort due to difficulties encountered in handling coking shale. The first run on the N-T-U retort was made on January 17, 1927, and it was operated intermittently until June 1, 1927. Considerable difficulty was encountered in keeping the retorting plant in operation during the winter months of 1926-27 due to the fact that the worst weather that has occurred on the western slope of Colorado for the past several years was experienced. Because of the numerous blizzards and extremely cold weather, it was impossible to bring down sufficient shale from the mine to keep both retorts in continuous operation.

During the time the plant was operating a total of 2,009 tons of oil shale was run through the retorts, yielding a total of 891 bbls. of oil. This is equivalent to an average yield of 18.6 gallons per ton. The shale charged to the retort had an oil content of from practically nothing to some material containing as high as 75 gallons per ton on assay tests, although the highest average yield for a single day's operation was 42 gallons per ton. The oil shale used came from a quarry at the outcrop of the shale on the escarpment about 2,700 feet above the plant. A thickness of approximately 60 feet of the shale escarpment was mined, which included the rich "mahogany ledge."

28 Gravity Oil Produced

The oil produced by the Scotch retort had an average gravity of about 28 degrees A.P.I. and yielded an average of about 25 per cent gasoline and naphtha. The oil from the other retort had an average gravity of about 21 degrees A.P.I. and had a gasoline-naphtha content of about 8 per cent. The gasoline-naphtha fraction from both crudes was deficient in low boiling fractions, and it would be necessary to blend the product with more volatile material in order to produce a finished motor fuel. Experiments demonstrated that additional quantities of gasoline could be made from shale oil by cracking. Due to the high content of unsaturated hydrocarbons and nitrogen compounds, the distillates from shale oil are difficult to treat in order to produce commercial products. The work on refining shale oil is being continued at

It's a Wilson



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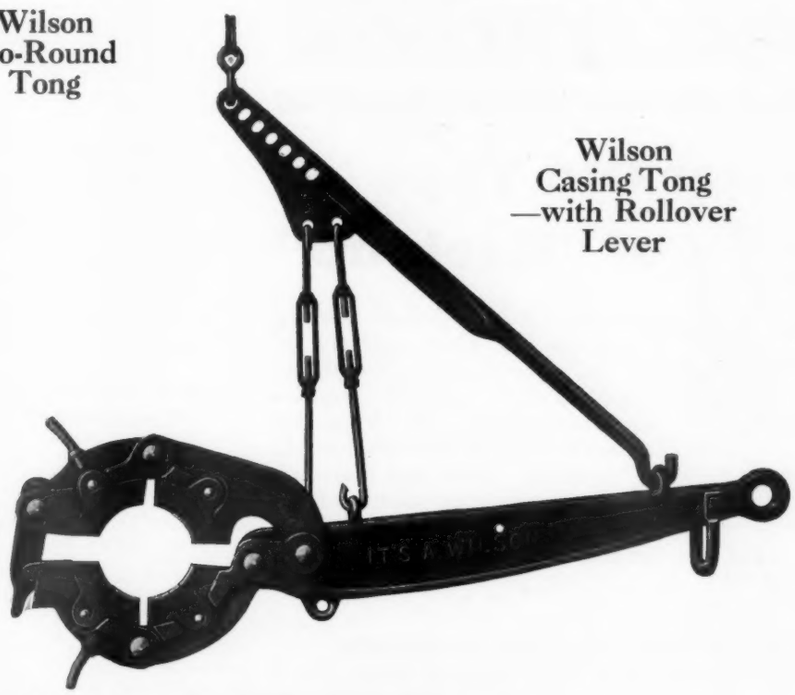
One for fast make-up and break-out service; one for fast casing service,—with Rollover Lever.

Wilson Go-Round Tong



Wilson Casing Tong —with Rollover Lever

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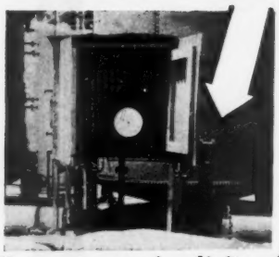
Eliminates Old Type of "Hook-up"



Note extreme simplicity of Robinson Orifice Fitting installation as well as small amount of space occupied.

ROBINSON Orifice Fitting takes the place entirely of the old style "hook-up" with its awkward and expensive by-passing arrangement. By using this improved fitting you save the cost of "hook-up" labor and material. There is no by-pass valve to stick open and leak and thus cause meter inaccuracy.

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ROBINSON ORIFICE FITTING

the Boulder laboratory in co-operation with the State of Colorado.

As a result of the two years' work in building and operating the experimental plant, the Bureau of Mines has obtained valuable information on such questions as drilling and shooting oil shale, the effect of retorting conditions on the yield and quality of oil, the methods to be employed in refining shale oil, etc.

It was not expected that mining and retorting cost figures could be obtained by continuing operations for so limited a period on such a small scale, but it is thought that the tests demonstrate the value of the naval oil shale reserves as potential sources of naval oil fuel supplies. The retorting studies will point out the principles to be followed in designing retorts for handling Colorado oil shales. An exhaustive report, covering the results of this experimental work, is now in course of preparation. The plant will remain closed until authority is granted by Congress either to permanently abandon the plant, arrange to have it operated by outside interests, or to have operations resumed by the Bureau of Mines.

OLDEST PRODUCING WELL IS INCLUDED IN SALE

OIL CITY, Pa., Sept. 24.—In one of the biggest oil deals transacted in the local oil fields for years, the Brundred Oil Co. has arranged for the purchase of producing leases of the Robinson Oil Co. The properties involved are the Clapp, Cornplanter and the part of the McClintock farm not under lease. Ninety-two wells are included. The Cornplanter and McClintock farm are in fee while the Clapp farm is a leasehold.

Included among the wells to which title passes with the deal is the oldest producing well in the world which is located near McClintockville and which is marked with a large sign located on Route 8 where all who travel by automobile up historic Oil Creek may read it.

The officers of the Brundred Oil Co., the purchasing company, are W. J. Brundred, president; H. D. Brown, secretary; John M. Wilson, vice president, and B. F. Brundred, treasurer.

CENTRAL ASIA DRILLING

In the newly opened Shorsu oil fields in Central Asia a second well has been put in operation, and a third will be put into operation in September. In the coming year eight additional wells are to be working. The local authorities have approved the project of an oil pipe line on which work is to be begun immediately, to be completed in May, 1928. It is planned to pump 500,000 poods through this line each month at the beginning.

PETROLEUM PRODUCTION IN CANADA INCREASES

(Continued from Page 67)

mediately this has been accomplished the well can be coupled up to the separator and will add another to the list of producing wells in this area.

Drilling Is Slow

"Several of the new wells, commenced during 1926, are now at considerable depth and nearing the limestone and within a short period further wells should be in the producing list and add considerably to the amount of naphtha produced. In the majority of these wells the shallow oil horizon has been met at depths ranging between 2,200 and 2,400 feet, but in no case has any attempt been made to develop this zone, although it is probable that wells drilled to this horizon would prove very remunerative owing to the initial low cost of drilling and the high market value which the oil can command. At present operators are all tempted to drill for the Royalite limestone.

Records of Wildcats

"Outside of the Turner Valley area, all prospecting wells have been drilled (without any connected method) and in the majority of cases at points remote from one another. A brief summary of these operations follows:

"Rice Creek. About 30 miles west of Nanton a well was drilled by the Imperial Oil Co. to a depth of 5,747 feet where operations were suspended until spring.

"Highwood area. About 20 miles west of the town of High River the Imperial Oil Co. is drilling a well at a depth of 1,780 feet.

"Bragg Creek, Moose Mountain, Jumping Pound and Bow River areas. During 1926 several wells were resumed and some started at different points in these areas, but none has yet reached a conclusive depth. In several, slight oil and gas indications were met which may, if followed up, lead to the discovery of productive areas.

"Wainwright. During the period under review only three new wells were started in this field, but none has yet been completed. An official test for production of the British Petroleum, Ltd., well No. 3-B was carried out during November, the test over a period of three days showed a production of clean oil amounting to 3.8 bbls. per hour.

"Ribstone. This is an area which has attracted a great deal of attention during 1926, and already three wells are being drilled. Up to date only one of these has been drilled to a depth where results may be expected; this is the Imperial Oils Ribstone No. 1 which met a good show of heavy asphaltic oil at 1,900 feet; this, however, has been cased off and drilling is proceeding to test deeper strata. The indication is encouraging and proves the possibility of this heavy oil being found in remunerative quantities somewhere in the neighborhood.

Conclusions

"From present indications it is evident a great deal of new prospecting and development work will be started during the coming season, and if this is efficiently carried out many interesting developments are to be expected which may lead to the discovery of more productive oil and gas areas."

Petroleum and its products imported into Canada during 1926 were valued at $52,063,686, an increase of $8,221,259 over the 1925 import of $43,842,427. Gasoline importations were recorded at 82,839,688 gallons invoiced at $11,958,795.

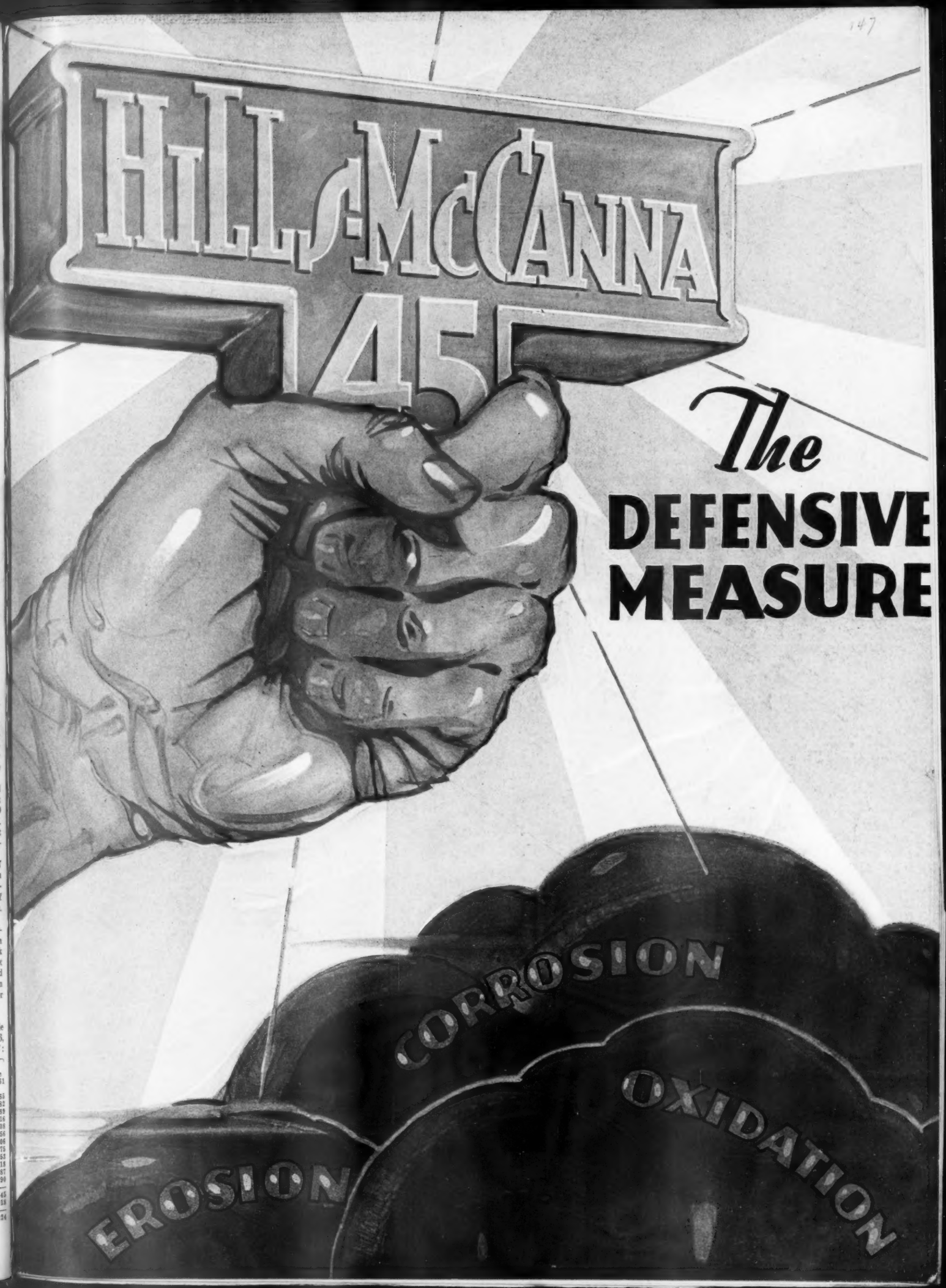
Crude petroleum amounting to 244,217 bbls. valued at $776,824 was produced in Canada during the half year under review. In the corresponding period of 1926 the production was 173,880 bbls. valued at $697,551.

Ontario producers received an average price of $2.10 a barrel, those in Alberta $3.76 and in New Brunswick $2.07. The Royalite well No. 4, a wet gas producer in the Turner Valley Field maintained its record average production of over 500 bbls. of crude naphtha per day.

Production by Pool

The following figures show the crude production for the various pools for 1926, and also for the first six months of 1927:

	1926		Jan. 1 to June 30, 1927	
	Bbls.	Value	Bbls.	Value
New Brunswick	10,544	$ 29,840	15,598	$ 32,361
Ontario—				
Petrolia-Enniskillen	56,170	153,428	28,089	58,565
Oil Springs	38,350	107,438	18,642	40,182
Moore Township	2,438	6,659	1,002	2,089
Sarnia Township	1,890	5,163	919	1,916
Plymouth Township	1,047	2,860	1,011	2,108
Bothwell	25,382	69,331	12,497	26,056
West Dover	959	2,619	147	306
Raleigh Township	676	1,845	276	575
Onondaga	555	1,516	361	753
Mosa Township	7,868	21,491	3,654	7,618
Thamesville	2,376	6,490	2,440	5,087
Dunwich	139	380	139	290
Total Ontario	137,850	$379,221	69,177	$145,545
Total Alberta	216,050	902,504	159,442	598,938
Total Canada	364,444	$1,311,665	244,217	$776,824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PROBLEMS of resisting wear, corrosion, erosion and oxidation are fundamentally the same since they lead to a common objective—the selection of an alloy or equipment that will successfully combat the conditions.

However, in the commercial application of non-ferrous or ferrous alloys, much depends upon the skill of the foundry in fulfilling expectations. In this respect Hills-McCanna's facilities and products appeal alike to the designing engineer, the equipment builder and ultimate consumer.

When the problem centers around sulphur bearing oils, petroleum vapors, etc., at high temperatures and pressures, Hills-McCanna "Forty Series" alloys offer unlimited engineering possibilities, through strength, density, light weight and remarkable resistance to fatigue.

Our "Fifty Series" covering a wide range of nickel bearing alloys, are particularly qualified for uses not covered by our "Forty Series." This is a very useful series for certain specific applications.

Our Chrome Iron—Chrome Steel—Chrome Nickel Iron or "Seventy Series" Alloys also present possibilities for extensive use against concentrates or gases at elevated temperatures.

Thus, whether your requirements are for Fittings, Still Plugs, Bearings, Gears, Thermometer Wells, Valve Trimmings or any Parts that must withstand "Severe Service" broad and intelligent service awaits you here. Our technical staff will gladly go over your situation.

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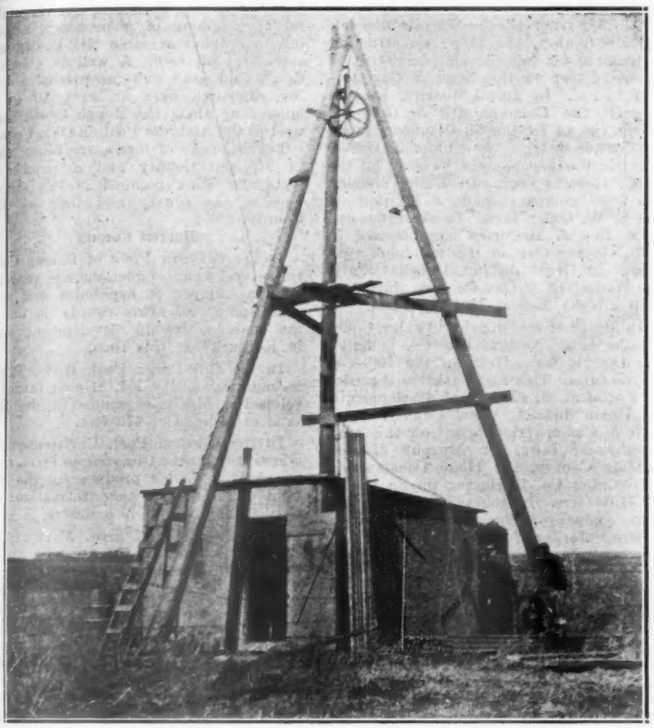
DIAMOND CORE DRILLING DISCOVERS MANY POOLS

(Continued from Page 56)

along the river beds. To work profitably the deposits which are favorably regarded, tunnels or drifts are driven into the sides of the mountains or hills from the river beds where the gravel is located.

To separate the black diamonds from the gravel, large washing pits are constructed, and placer mining methods used The gravel is placed in small wooden basins, and the task of separation is done by the most experienced of the miners.



The tripod and portable house which covers the drilling equipment of the core drill outfit

Like Close Grained Steel

The inner faces of freshly broken carbon show light gray in color, and resemble close grained steel. The broken surfaces gradually oxidize when exposed and gradually assume a dark ash gray color. Carbon differs from the white diamond and has no planes of cleavage and is therefore less liable to fracture. On this latter account it has a distinct commercial advantage for cutting purposes where resistance is of paramount importance.

The advent of the diamond drill has caused a marked change in the price which carbon commands, and prior to its use, the carbon was mostly used by jewelers who ground it up and used it for polishing valuable stones. In 1888 it is reported that carbon was selling for $15 per karat. Today, it is reported at $100 per karat. The average size stone used in diamond drilling ranges from two to six karats. The larger sizes are thought to be economical because they are easier to set, and not so liable to be dislodged while being used for drilling.

The art of setting the carbon in the diamond drilling bit requires considerable experience and skill if the proper results are to be obtained. The usual procedure on a drilling operation is to have one driller who is a diamond setter, and two sets of stones are usually kept at each drilling outfit.

The stones, which are mined by cheap manual labor in Brazil, find their way into many industrial uses. The petroleum geological profession has come to know them very well. They have been responsible for a step forward in the science of finding oil.

EASTERN FIELDS

(Continued from Page 54)

sand its test on the James Reed farm. It is a gasser.

Duster in Pleasants County

In Jefferson district, Pleasants County, Ralston & Morrison have completed in the salt sand a test on the Robert Ingram farm. It is a duster. In Grant district, Ritchie County, the Hope Natural Gas Co. drilled deeper its test on the J. M. Lewis farm. It is a gasser in the Berea grit.

Dark Oil Producer

In Poca district, Kanawha County, the Chartiers Oil Co. is testing in the Big Lime its test on the Lewis Painter farm. The location is 1,500 feet west of the same company's test on the B. G. Haynes farm. The oil removed from this well is dark in color but light in gravity.

Near Cramp's Postoffice, West Union district, Doddridge County, James Foley has now drilled his test on the N. D. Pratt farm through the Gordon sand, to a depth of 2,647 feet and it is a light gasser.

In Henry district, Clay County, the United Fuel Gas Co. has completed in the Big Injun sand a test on the W. C. Lanom farm. It is a gasser good for 250,000 feet. The location is three-quarters of a mile west of the same company's second test on the J. M. Gross farm.

In Sardis district, Harrison County, Hugh B. Burke has made a location on the Jesse Hannah heirs' farm. In Ten Mile district, C. T. Arnett & Co. are due in the Big Injun sand on the Ferdinand Rodgers farm. In McClelland district, Doddridge County, J. H. Pentz has made the location for a second test on the William Underwood farm.

West Virginia Tests

On Worthington Creek, Union district, Wood County, E. A. Sweeney has moved in a drilling machine to a location for a test on the G. H. Ralston farm.

In Grant district, Ritchie County, the Mellon Oil Co. is due in the sand on on the O. C. Thomas farm. In Murphy district, Captain Davis and others are fishing at a second test on the Asa W. Flesher farm. In Grant district, Robert Richards has shut down at 1,200 feet on the O. C. Ghomas farm. In Murphy district, Smith Wahn is drilling at 1,600

Eliminate Groaning Blocks

GROANING blocks are similar to groaning humans, in that where there's a groan there's a grief. When blocks start groaning better look to the bearings.

Then the next block you buy get a groanless, griefless block. Any one that is equipped with heavy duty American Roller Bearings will be a good buy. And then you can bet your last string of tools there will be no complaint from the block or from you, about the bearings.

The quality of bearings in a crown or traveling block number the days of the block's durability and govern the extent to which you can get satisfaction from its service. Remember the slogan — "No Weight Too Great," belongs to American Heavy Duty Type "C" Roller Bearings.

The "Standardized Bearing" in the equipment of:
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Lee C. Moore and Co.
Lucey Manufacturing Co.
Oil Well Supply Co.
Star Drilling Machine Co.

"Get them in the first place; use them to replace plain bearings."

AMERICAN ROLLER BEARING CO.
PITTSBURGH, PENNA.

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feet on the Charles Wolf farm. In Union district, Pleasants County, Keith Thompson has started to drill on the James Adams farm. On Breden Creek of Twelve Pole Creek, Harvey district, Mingo County, the Public Gas Corp. has started to drill down its old No. 1, a gasser, on the Logan Cannel Coal Co.'s tract. The location is 1,000 feet south of No. 7 on the same tract. In Lee district, Calhoun County, the United Fuel Gas Co. is due in the Big Injun sand on the J. L. Stump farm. In Sherman district, the Hope Natural Gas Co. is due in the same formation on the Okey Parsons farm.

On McFarlan Creek, Murphy district, Ritchie County, the Hope Construction & Refining Co. has the rig completed for a second test on the Noah & Gay Jordan farm. In Duval district, Lincoln County, the Cameron Oil & Gas Co. has a rig up on the M. Meadows farm. In Carroll district, the Columbia Gas & Electric Co. has made a location on the C. C. Roberts farm. In Union district, the same company made a location on the S. W. Oxley farm. In the same district, Roy & McComas have started to drill another test on the Randolph Sias farm. In Grant district, Cabell County, the Aetna Oil & Gas Co. has started to drill on the Robert Hatfield farm.

In Booth Creek district, Taylor County, the Hope Natural Gas Co. is building the rig for a test on the Belle S. Payne farm. This test might be regarded as a wildcat, in advance of developments. In Union district, Wood County, Rothwell & Co. are rigging up on the John Freshwater farm. In Murphy district, Ritchie County, the Hope Construction & Refining Co. is rigging up on the J. T. Hill farm. In the same district, the same company is completing a rig on the Andrew Jordan farm. C. S. Morris & Co. have shut down at 1,823 feet on the J. M. Rymer farm.

Southwest Pennsylvania

In East Finley Township, Washington County, the Natural Gas Co. of West Virginia has completed its test on the F. L. Knox farm, located three-quarters of a mile southwest of the Mosier-Hill Oil Co.'s test on the J. M. Mosier farm. It is a duster.

In Raccoon Township, Beaver County, the Laughner Oil & Gas Co. has completed a test on the Roberts farm. It is a duster. This was the only well drilling in Beaver County.

In Jackson Township, Greene County, Ross & Conklin have completed a test on the J. C. Hampson farm. It is a duster. The location is 1,200 feet northeast of the Hampson Oil & Gas Co.'s test on a part of the same farm.

In Perry Township, the Carnegie Natural Gas Co. is due in the Gordon sand on the M. L. Jones farm. In Whitely Township, the same company is drilling on the H. M. Fordyce and Cumberland Coal Co.'s farms. In Perry Township, the Peoples Natural Gas Co. is drilling on the Margaret Fosmack and Knotts heirs' farm. In Greene Township, J. B. Orndoff and others are drilling on the Amanda Rice farm. In Whitely Township, Sterling & Van Voorhes are drilling near the top of the Big Injun sand on the Baker Bear farm. In the same township, the Philadelphia Gas Co. has started to drill on the R. F. Johns farm and has the rig completed for a second test on the Taylor Fox farm.

KENTUCKY-TENNESSEE

(Continued from Page 52)

the John M. Miles 57 acres, in the Roby Pool, in Daviess County and to the southwest of Pellville. The well is estimated at better than 75 bbls., and adjoins the John Roby lease upon which the discovery well was found by the Leeper Oil Co. some months ago. Recently a number of good wells were found in this pool and should soon show a big increase in the Daviess County production.

Dave Duncan's No. 1, on the Eli Corder farm, is estimated as good for 2 bbls., and No. 2 is now under way.

The Rowe Oil Co. is drilling a wildcat on the Doctor Becker farm, about 6 miles out of Owensboro, in Daviess County, the contract work being done by the Leeper Oil Co. This is known as the Daviess County Poor Farm.

Dr. M. G. Buckner and others are drilling a test west of the Roby Pool, near the town of Knottsville, on the Henry Speak farm.

McLean County

Dimmick Brothers, drilling on the John Ratliff lease, 3 miles southeast of Utica, in McLean County, is reported at a depth of 515 feet. Activity in this section is running only second to the Bell Run's section. Prospects are favorable for the striking of a producer, according to opinion of some well-known and successful oil men. A well in this section would mean quite an extensive drilling campaign over an area 10 to 12 miles long along the Rough Creek fault, west of the Ambrose Pool, in Ohio County.

Large blocks of leases are being taken in McLean County and a number of tests are being planned in the eastern part of the county and west of Ohio County.

Barren County

In the Glasgow Field of Barren County, several new completions are reported, with a number of dry holes and some small pumpers. This county is one of the most active in development work in Kentucky at this time.

In the Hall-Baker Pool, R. B. Tyler's second test on the Ed. Minich farm, developed a nice gas volume in the Blue sand at a depth of 473 feet.

In the Wisdom Pool, Christensen and others' test on the Christensen farm, made an effort to find a producer in the Blue sand but found that formation had pinched out, and it is a duster.

In the Coral Hill area, Moore and Scott have a duster in a test on an unknown farm at a depth of 610 feet.

In the Bohnair district, Johnson and others' test on an unknown farm, went to a depth of 375 feet and the venture was given up as a dry hole.

In the Bechton-Stoney Ridge district, Ziegler and others drilled a dry hole on an unnamed farm, at 550 feet. Samson Oil Co.'s No. 1 Barrick farm, got salt water and a duster as far as oil is concerned at a depth of 500 feet.

In the Lecta Pool and its extensions, J. G. Esslinger's test on the Gooden 10 acres, found sand from 461-97 feet and went to a total depth of 524½ feet, getting a 3-bbl. pumper. Browning Oil Co.'s No. 7 J. H. Browning farm was dry at 325 feet. Ziegler and others' No. 1 Sam Gooden farm is a 9-bbl. pumper. Hunt, Leach & Mitchell's No. 26, on the Vance G. Taylor farm, is a 15-bbl. pumper at 442 feet. Samson Oil Co.'s Nos. 6, 7 and 8, on the Walter Browning farm, are producers good for 7, 5 and 10 bbls. respectively. R. B. Tyler's No. 2 Peden farm was dry at 445 feet.

Other Completions

In the Bowling Green Field of Warren County, the Thompson Oil Co.'s No. 7 well, 200 feet from the south line and 1,700 feet from the west line of the Joe McLemore farm, is reported to have pumped an initial of 3 bbls. at 1,093 feet.

Late advice is that Daugherty and others' No. 4, on the Cora Wells 130-acre farm in the Ambrose Pool, in Ohio County, was in the sand and making a showing for a good producer.

CENTRAL WEST FIELDS

(Continued from Page 52)

line of the Pat Riley farm, in the northeast quarter of Section 27, same township, topped the sand at 1,126 feet and struck a nice gas volume at 30 feet in the sand; the well was then hooked to the gas line going to Celina.

In the Elmore Field, in Harris Township, Ottawa County, the Burman Oil Co.'s No. 4 in the northwest corner of the Gust Magsig 20 acres, on the oil map as the Louis Frese farm, in the southeast quarter of Section 23, showed a production of 5 bbls. under pump. Sand was found at 1,256 feet and went to a total

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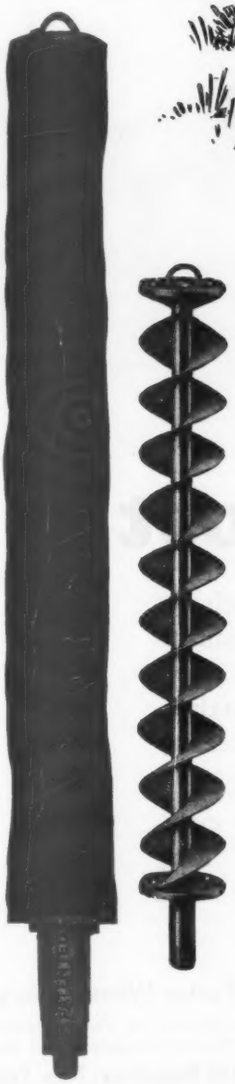

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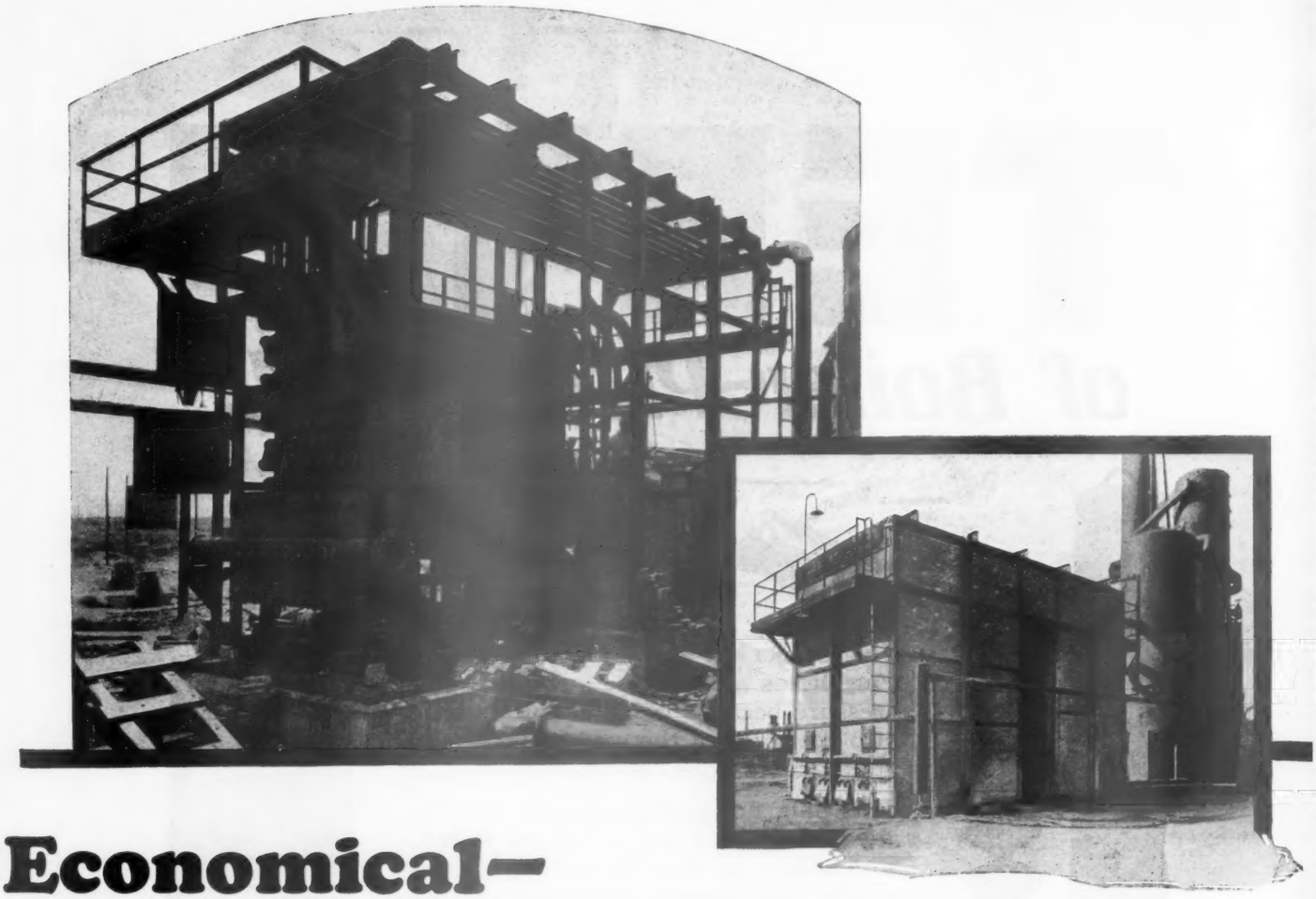

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Indiana

There is a scarcity of completions for the week in the Indiana Field, as only one well was reported, which is a wildcat drilled by the Ohio Oil Co., in the southwest corner of the Rufus Morgan farm, in the southeast quarter of Section 26, Madison Township, Pike County. This test got the top of the sand at 912 feet and when drilled 42 feet in the sand, showed an initial first 24 hours' gauge of 48 barrels. Other wells will be drilled at once on this lease.

South of Terre Haute, in Prairie Creek Township, Vigo County and just north of the Sullivan Field of Sullivan County, the Siosi Oil Corp. has at least five drilling wells that should reach the pay sand within a short time. The sand is found around 2,000 feet and requires quite a while to bring them in.

More than 20 wildcat wells are drilling over about 17 counties well scattered over Indiana, reaching from the north end to the south end of the state and from the east to the west sides. Some of these may open something worth while, but they are slow in completing them as quite a few of them are shut down and others are having troublesome fishing jobs. It is reported that the well being drilled by Pennsylvania parties on the William B. Coffing farm, near Covington, in Troy Township, Fountain County, that struck the top of the Trenton at 1,709 feet, with only a slight oil indication at 1,739 feet and drilled to a total depth of 2,320 feet, and shut down, has secured a new cable and will make a deep test of the venture. There is some talk of making an effort to reach the lower Cambrian formation with the drill.

State Geologist Report

T. M. Kingsbury, state gas supervisor, Department of Conservation, Division of Geology, Indianapolis, Ind., has this to say in part in his last report of Indiana:

"The well on the William B. Coffing farm, Section 28, Troy Township, Fountain County, Indiana, near Covington, reported last month as dry, was only abandoned temporarily. A new cable has been secured and the well will be drilled deeper. It is now down 2,320 feet. The top of the Trenton limestone is reported 1,709 feet. There was a showing of oil at 30 feet in the Trenton.

"The Enlow and others well on the John Enlow farm, Section 15, Montgomery Township, Gibson County, is about 1,700 feet deep and still shut down for orders.

"L. A. Painter, representing the Keystone Oil Co., has leased about 10,000 acres in the southwestern part of Greene County, and will start drilling a test soon.

"The Railroaders' Gas Co., which has been in the hands of receivers for some time, will be reorganized by Arthur Miller, of St. Louis, Mo., and Charles Van Cleve of Indianapolis, and others. This company has about 40 gas wells in Harrison County in the southern part of the state. An effort will be made to pipe the gas to New Albany, it is reported. The Louisville Gas & Electric Co. has drilled several more wells in Harrison County in the Dogwood area, including No. 2 Henry J. Buse and No. 1 W. S. Beatrick. Gas was found in the brown shale at a depth of about 700 feet.

"Nick Masters is drilling on the Charles and William Kent farm, Pike Township, Jay County, 1½ miles east of the Hotmire Pool. He plans to make several tests in this vicinity.

"The well on the Luther Hert farm, 4 miles north of Indian Springs, Section 19, Baker Township, Martin County, drilling by B. J. Dinning, is reported at a depth of 443 feet.

"Charles Willey, representing the Lincoln Refining Co., has taken several lesaes in Posey County and it is reported two test wells will be drilled, one near Poseyville and one near New Harmony.

"The gas well drilled by S. G. Lowe for Shelbyville men, which was completed last month, is on the Arthur Speagel farm, Noble Township, Shelby County, 1½ miles south of Sulphur Hill. Top of Trenton was 819 feet and a good flow of gas was encountered at 42 feet in the Trenton.

"The Michigan-Ohio Oil Co. has leased about 4,000 acres near the Indiana-Michigan line and plans to drill north of Granger on the Michigan side.

"A company, in which Arthur Nash, of Cincinnati and Thomas Dean of Tipton are interested, has leased about 6,000 acres northeast of Tipton and has started a test on the William Steele farm, near Rigdon, in Tipton County.

Central Ohio

Only two completions were reported from the Central Ohio Field, which like other sections of the Central West Field, is showing little activity. In Richland Township, Holmes County, the East Ohio Gas Co. brought in a fairly good gas well in a test 1,125 feet from the north line and 450 feet from the east line of the J. S. Snyder 43 acres, Section 14.

In Monroe Township, Coshocton County, the Logan Gas Co. brought in a test on the Oliver Borden farm, Section 18, that shows a nice gas volume.

Several wells in the Cleveland Field, of Cuyahoga County, in Monroe Township, Coshocton County; several in Holmes County and others in Wayne, Medina, Ashland, Lorain, Knox and other counties are nearing the depth to find the gas sands.

Michigan

Eight completions are reported from the Saginaw and other Michigan fields, since the last report, all being producers in the Saginaw Field and a salt water well in the Owosso Field, of Shiawassee County. The Saginaw Field proper is getting pretty well drilled over, or would be, were it not for the drilling on lots over the City of Saginaw. There are still numerous locations on acreage property to the north and northwest of the city limits, and within the borders of the field as it stands at this time. Extensions may be made to the present limits, but operators are up in the air as to which way to go to find an extension and no one will announce their idea of where the field will extend.

The Saginaw Prospecting Co., the discoverer of the field, announced some time ago that it would shut down operations after seven wells that were drilling at the time were completed. These seven wells have been drilled in and all producers, and this company has concluded to do some more drilling and is starting a couple of new wells on the Eddy estate property, within the city limits. Close to 70 wells have been drilled by this home company since it drilled in the original producer on the Saginaw City-owned property, known as the Deindoffer woods, at the north edge of the city some two years ago. There are still something like 50 or more strings of tools running in the Saginaw Field and outside development in 15 more counties over the Wolverine State.

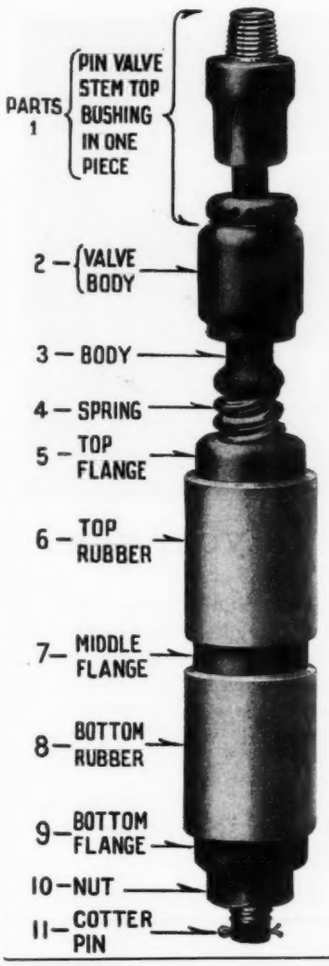
Completions

The Sun Oil Co., one of the most active development companies in the field at this time, is doing quite a lot of drilling. This company's No. 7 on the Schoenteit farm, Section 11, Saginaw Township, just north of the city limits of Saginaw, is reported showing for an initial of around 15 bbls., from the Berea sand. This company's second well on the Pere Marquette Railroad right of way, at Davenport Street, near Mary Street, is rated at 20 bbls., initial. Sand was topped at 1,817 feet, drilled 18 feet in the sand and given a shot, while its No. 3 on the George Kuck farm, Section 10, in the northwest part of the field, is rated at 10 bbls.

Jack Hendricks and others' second well on the Campau property, on the west bank of the Saginaw River between the Michigan Central and Grand Trunk Railroad bridges, struck top of the Berea sand at 1,810 feet and drilled 20 feet in, and rated as good for 20 bbls. initial.

The Superior Oil Co.'s No. 5 on the Spatz property at the northeast corner of Barnett and Reed Streets, struck top of sand at 1,812 feet and went 18 feet in the sand and shot, resulting in what indicates a 15-bbl. producer.

The Fordney Petroleum Co.'s No. 1, at the southwest corner of Cronk and Durand Streets, shows for 15 bbls. initial.



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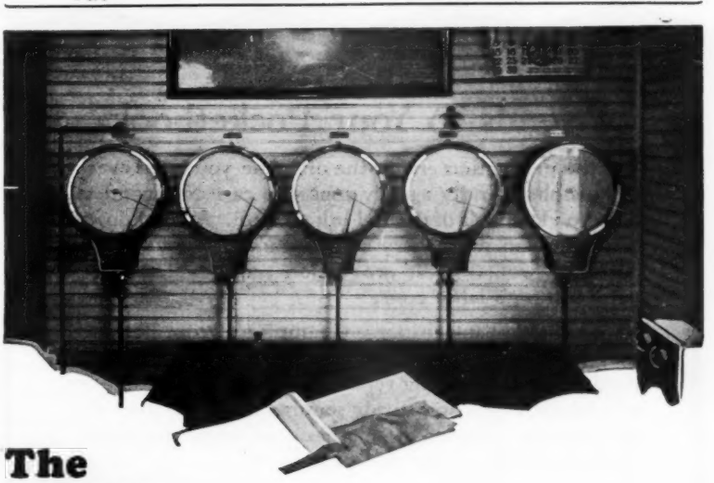

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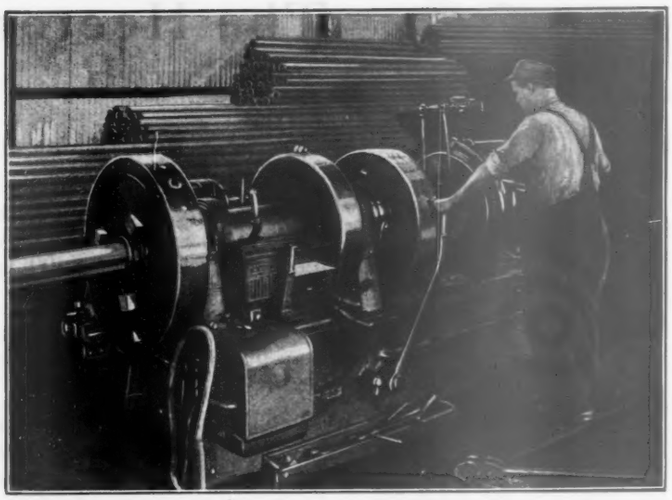

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Sand was topped at 1,830 feet and drilled 19 feet in and given a shot.

Morley Brothers' second well on their property, near the foot of Janes Street, on the river bank, is reported showing for 20 bbls. initial.

The Sun Co.'s test on the Gallagher & Scully lease, near Morse, in Antrim Township, Shiawassee County and about 13½ miles southeast of Owosso, is reported as a dry hole in the Berea sand, which was topped at 1,033 feet. It is being drilled deeper for the Saginaw sand and a string of casing was set at 1,188 feet and at last report had reached a depth around 1,350 feet.

Field Notes

The Sun Oil Co. is drilling its No. 8 on the Schoenteit farm, Section 10, Saginaw Township, to the Saginaw sand, and is getting close to that formation.

The Pure Oil Co., in connection with the company at Sebewaing, is drilling core wells in the Thumb area of Huron County, to try out the structure before actual drilling is started. Several of the core tests will be made over the northwestern portion of Huron County.

The Fordney Petroleum Co. found no oil in its test well near Owosso, in Shiawasse County, in the Berea sand that was struck at a depth of 1,908 feet and is now going down to test out the lower formations.

The Wicks Brothers have started operations on their third well on their property at Carroll and Water Streets on the east side of the Saginaw River.

The Sun Oil Co. is drilling No. 5 on the Louis Voight farm, to the northwest edge of the Saginaw Field, as well as drilling No. 4 on the George Kuck farm, in Section 10, Saginaw Township.

Crowley & Carr are starting a well between Park Avenue and Ward Street, on an 8-acre lot on the south side of Phelon Street. This well is in the eastern part of Saginaw, and will be an important test.

The Sun Oil Co. got another dose of water at its test on the McGuinnes farm at 2,298 feet and may abandon it. It is in the Owosso Field of Shiawassee County.

The Universal Oil Co.'s test near Mt. Morris, in the northern part of Genesee County, and north of Flint, failed to find a pay sand in the Berea at around 1,650 feet and shut down at a depth of 1,700 feet to figure out whether to go on down for a deeper pay or stop at the present depth.

Myron E. Lee has a fishing job for a lost bit in his No. 5 on the Brechtelsbauer lease, in the Saginaw Field, east of Hermansau Road and south of the Shattuck Road, in the north edge of the Saginaw Field.

An important test that will be watched with much interest is that being drilled by Frank Obee, in Section 17, Minden Township, Sanilac County. This test is far away fro many known development, being northwest of Port Huron and almost due east from Saginaw.

Vorhees & Sovereign are drilling their test, near Sterling, in Arenac County, in the southwestern part of the county, and northwest of the town of Standish, and northwest of Saginaw Bay.

Illinois

The wildcat venture made by the Arkansas Fuel Oil Co., 200 feet from the south line and 1,200 feet from the west line of the J. W. Alexander farm, in the northeast quarter of Section 4, Melrose Township, Clark County, Illinois, about two miles west of what is known as the Ohio neighborhood. This well found the Niagara lime formation at around 2,600 feet and had a slight showing of oil, but concluded to drill deeper. At a total depth of 2,806 feet the well was given up as a failure. This test is 4 miles south and 2 miles east of Martinsville; 1½ miles southwest of Lindsay and 2½ miles northeast of the Moriah shallow field in Orange and Johnson Township, same county.

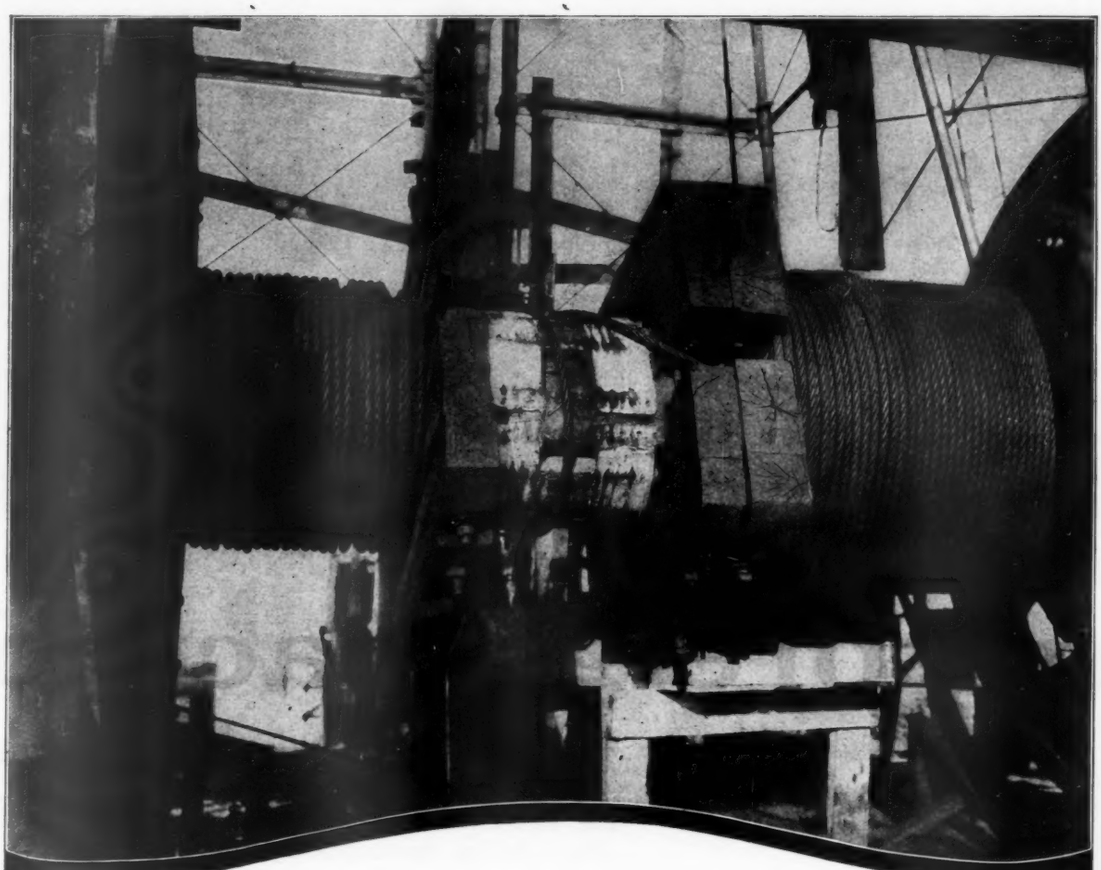
South of Allendale, in Wabash Township, Wabash County, Phipps, Blosser and Young's well in the southeast corner of the Howard Armstrong farm, in the northwest quarter of Section 24, struck top of sand at 1,432 feet and at 38 feet in the sand, showed an initial production of 10 bbls.

The Upton Oil Co.'s test, 250 feet from the north line and 400 feet from the east line of the W. C. Mills farm, in the northeast quarter of the northwest quarter of Section 15, Grandville Township, Jasper County, was dry at a total depth of 675 feet. This test is near the town of Bellair, 10 miles south and 3 miles east of Casey and 10 miles north and 2 miles west of Oblong.

State Geologist's Survey

The Illinois State Geological Survey has just issued a late pamphlet of development work in Morgan County, Illinois, showing 55 wells completed and another that is in the sand, but yet not ready to put to producing, which is No. 10 on the Travis farm. The report was compiled by Alfred H. Bell of the Geological Survey, and is as follows:

Company and Farm—	Well Number	Section	Part of Section	Remarks:
P. C. Irwin & Co., Conklin	1	2	SW NW	Gas
P. C. Irwin & Co., Conklin	2	2	SW NW	Gas
P. C. Irwin & Co., Conklin	3	2	SW NW	Light gas
P. C. Irwin & Co., Conklin	4	18	NW NE	Abandoned
P. C. Irwin & Co., Conklin	5	18	SW NE	Dry
P. C. Irwin & Co., Conklin	1	18	SW NE	Oil
P. C. Irwin & Co., Conklin	2	18	SW NE	Dry
P. C. Irwin & Co., Conklin	3	18	SW NE	Abandoned
P. C. Irwin & Co., Arnold	1	18	NE SW	Abandoned
P. C. Irwin & Co., A. J. Harris	1	2	NW SW	Dry
P. C. Irwin & Co., A. J. Harris	1	3	SE NE	Gas
P. C. Irwin & Co., A. J. Harris	2	3	SE NE	Gas
P. C. Irwin & Co., A. J. Harris	3	3	NE SE	Gas
P. C. Irwin & Co., A. J. Harris	4	3	SE SW	Gas
P. C. Irwin & Co., A. J. Harris	5	3	NE NE	Dry
P. C. Irwin & Co., L. Trotter	1	3	SW SW	Abandoned
P. C. Irwin & Co., A. L. Trotter	2	3	SW SW	Gas
P. C. Irwin & Co., Rayburn	1	4	SE SW	Gas
W. Kennedy, D. I. Green	1	5	NE NE	Abandoned
W. Kennedy, O. Cully	1	6	NE SW	Dry
W. Kennedy, Cleary	1	8	SE NW	Abandoned
W. Kennedy, Tindall	2	16	SE NE	Abandoned
W. Kennedy, Tindall	3	16	SE NW	Abandoned
W. Kennedy, Tindall	4	16	NW NW	Abandoned
W. Kenndy, Green	1	16	SW NW	Abandoned
W .Kennedy, Hemphill	1	16	NW SW	Abandoned
W. Kennedy, Masters	1	16	NW NW	Abandoned
W. Kennedy, Masters	2	9	NW SW	Abandoned
W. Kennedy, Travis	1	17	SW NE	Abandoned
Unknown, E. O. Green	1	8	SE SW	Question
Unknown, Mahon	1	8	SW NE	Abandoned
Unknown, Coons	1	8	SE SW	Abandoned
Unknown, I. Tindall	1	16	NE SE	Abandoned
Unknown, N. O'Rear	1	15	NW NW	Abandoned
Unknown, Dunlap	1	17	NW NW	Abandoned
W. Cody & Co., Conklin	1	18	NE NE	Abandoned
W. Cody & Co., Conklin	2	18	NE NE	Abandoned
Timberlake & Higgins, Cleary	1	8	SW NW	Oil
Timberlake & Higgins, Cleary	2	8	NW NW	Gas
Timberlake & Higgins, Mahon	7	8	SE NW	Oil
Timberlake & Higgins, Mahon	8	8	SW NE	Oil
Timberlake & Higgins, Mahon	9	8	SW NE	Oil
Timberlake & Higgins, Travis	10	8	NW SE	Drilling
Timberlake & Higgins, Willerton	1	18	SW NW	Gas
Rhodes & Moorhead, Cleary	2	8	NW NW	Dry
Rhodes & Moorehead, Mahon	1	8	SW NE	Oil
Rhodes & Moorehead, Mahon	2	8	SW NE	Oil
Frank Byrns & Co., Willerton	1	18	NE SW	Abandoned
Frank Byrns & Co., Willerton	1	18	SW NW	Abandoned
Benoist Brothers, Travis	1	8	NW SE	Abandoned
Unknown, Travis (old well)	1	8	NW SE	Abandoned
Leeper & Curtis, Mahon	1	8	SE NW	Show oil
Lepeer & Curtis, I. Tindall	1	16	NE SE	Abandoned
Five Star Petroleum, Mahon	4	8	SW NE	Show oil
Five Star Petroleum, Coons	1	8	NW SW	Abandoned
P. C. Irwin, O'Rear	1	10	SW NE	Gas



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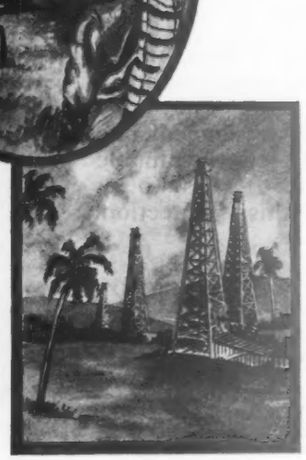

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LOUISIANA-ARKANSAS

(Continued from Page 38)

900 feet. J. S. Gould's No. 1 Grayling, Section 11-15-2e, is shut down at 2,249 feet for rig repairs. Industrial Gas Co. has a derrick up for No. 1 McGee, Section 3-18-4e. Ladell Properties, Inc., is drilling at 1,865 feet in No. 44 fee, Section 6-19-5e, and has a derrick up for No. 45 fee, Section 20-19-5e. Ouachita Natural Gas Co. has abandoned No. 2 D'Arbonne, Section 25-19-2e.

In Union Parish, Natural Gas Producing Co. has completed No. 3 Peak, Section 5-20-4e, making an estimated 13,000,000 feet of gas from a formatiion at 2,145 feet. Southern Carbon Co.'s No. 1 Harris, Section 20-20-4e, is drilling around 225 feet. This company has a 10,000,000-foot gasser in No. 1 Jackson, same section, completed at 2,159 feet.

Webster Parish

Crusaders Oil & Producers Co. has cemented 6-inch casing at 2,496 feet in No. 18 Hope, Section 24-21-10. Magnolia Petroleum Co.'s No. 2 Branton, Section 6-22-10, is drilling around 2,606 feet. This company's No. 1 (D. G.) Cox, Section 22-21-10, is shut down at 50 feet. No. 3 Cox, Section 23, a deep test, is at 4,301 feet where 6⅝-inch casing has been set. This company's No. 1 Cole, Section 27, is down 335 feet where 13⅜-inch casing has been set. This also is to be a deep test. No. 3 Marshall, Section 21, is pumping 50 bbls. of oil from sand at 2,559-66 feet. No. 5 on the same lease has 10¾-inch surface casing cemented at 327 feet. No. 1 Waller-O'Bier, Section 32-23-9, is drilling chalk rock at 2,228 feet. R. W. Norton, after deepening No. 1 Josey & Massey, Section 27-21-10, from 4,360 feet at which level it originally had been completed, to 4,657 feet, got a 3,000,000-foot gas well. Ohio Oil Co.'s No. 4 Holloway, Section 23-21-10, is drilling at 2,954 feet.

ARKANSAS

Smackover Field

In the Norphlet area of Smackover, E. M. Jones has recemented 5⅞-inch casing at 2,513 feet in No. 11 Murphy, Section 17-16-15, in an attempt to shut off the salt water encountered when the well was tested at a total depth of 2,519 feet. Keen & Woolf are going to deepen No. 4 Murphy, Section 9, completed in March making 3,000,000 feet of gas at a total depth of 2,650 feet. The hole is being washed to the bottom. Lion Oil & Refining Co. has completed No. 6 Hays, Section 4, pumping 450 bbls. of fluid, 75 per cent salt water, from sand at 2,370 feet. This company's No. 7 Hays, same section, is drilling at 2,250 feet. Magna Producing Co. also has a well in No. 1 Murphy, Section 15, this one pumping 130 bbls., 25 per cent salt water, from sand at 2,467-69 feet. Magnolia Petroleum Co.'s No. 3 Murphy, Section 8, tested an estimated 3,000,000 feet of gas with a show of salt water at 2,688 feet. A string of 4¾-inch casing has been cemented. This company's No. 6 Wilson, Section 17, gauged 4,680,000 feet of gas with a rock pressure of 170 pounds when completed in a sand at 2,746-54 feet. Standard Oil Co.'s No. 33 Murphy, Section 4, has 3-inch drill stem stuck at 2,550 feet. Unity Petroleum Co. has cemented 6-inch casing at 2,373 feet in No. 12 Roper, Section 3. These tests are in Union County. In Ouachita County, Marine Oil Co. is fishing for the swab dropped in the hole at No. 14 Snyder, Section 34-15-15, at 2,360 feet.

In Louann, Smitherman & McDonald are arranging to deepen No. A-2 Saxon, Section 32-15-15, which was completed at 1,946 feet as a 300-bbl. producer in September of 1923. The Texas Company's No. 1 Davisson, Section 26-15-16, tested salt water at 2,306 feet with a sand tester and now is being reamed to the bottom at 2,347 feet.

Stephens Field

Brewer and associates are drilling at 1,562 feet in No. 1 Curry, Section 32-15-19. Buffalo Oil Co.'s No. 3 Culp, Section 22-15-19, is shut down at 2,075 feet.

Lisbon

Rovenger Oil Corp. has torn down the derrick and abandoned the location for No. 4 Harrell, Section 15-17-16. This company recently was purchased by James & Olsen.

Nevada County

Autrey Oil Co. has completed No. C-1 Martin, Section 6-14-20, pumping 50 bbls. from sand at 1,188-97 feet. This company's No. C-2 on the same lease is down 91 feet having started drilling the past week. Burnham and associates' No. 1 McKinney, Section 9-14-21, is drilling at 942 feet. Humble Oil & Refining Co. is bailing in No. 1 Fairchild, Section 6-14-20, to test a sand at 1,187-91 feet. J. J. O'Brien's No. B-3 Haynie, Section 1-14-21, is in a sand at 1,156-63 feet and is to be put on the pump. No. B-4, this lease, is a new operation with 10-inch casing cemented at 22 feet. This operator's No. B-12 Moss, Section 1, has been put on the pump good for 125 bbls. from sand at 1,168-77 feet. A rig is up for No. B 8 Moss. No. B-5 is waiting on a standard pumping rig having a sand at 1,156-62 feet.

SOUTHWEST TEXAS

(Continued from Page 41)

Walsh, Survey 185, located 2,050 feet to east line and 1,750 feet to north line, is drilling at 2,004 feet.

Alworth Field—Jim Hogg

Smilock's No. 1 F. S. Martinez, Survey 38, Block 4, located 660 feet to SE cor., is location. Alworth-Stevens-Hild's No. 20 M. Garza, Survey 39, Block 7, located 35 feet to southeast lines and 300 feet to northeast lines, has been spudded in.

Schott Field—Webb

Magnolia Petroleum Co.'s No. 9 Garcia, Survey 58, located 937 feet to west lines and 150 feet to north lines, has been spudded in.

Albercas Pool

Newton Drilling Co.'s No. 2 Bruni, Block 64, located 600 feet to west line and 1,470 feet to south line, is location. Magnolia Petroleum Co.'s No. 1 Yeager-Strolman, Block 65, located 150 feet to SW cor., at 2,102-03 feet tested considerable gas through tester.

Aviator Field

Pittman & Moriarty's (Radio lease) No. 8 Puig, Block 4, is location for test.

Carolina-Texas Field

D. J. Simmons' No. 2 de la Garza, Survey 335, Block 8, located 150 feet to SW cor., is standing at 400 feet. Houston Oil Co.'s No. 2-A Barnsley, Survey 268, Block 12, at 400 feet to west line and 350 feet to west line, is drilling at 2,900 feet. Magnolia Petroleum Co.'s No. 2 Webster, SW NE Survey 684, located 150 feet to NW cor., is drilling at 2,106 feet.

Andrews Pool

R. M. Strum's No. 1 Lopez, Survey 309, located 1,000 feet to NW cor. and 250 feet to north line, is moving on.

Cole Gas Field No. 2

Cole Petroleum Co.'s No. 36 Benavides, Survey 412, Block 14, located 159 feet to east line and 266 feet to north line, is drilling at 4,600 feet; No. 48 Benavides, Survey 412, Block 5, located 125 feet to north line and 733 feet to east line, at 2,347-58 feet tested small oil show through drill stem.

Mirando Valley Pool—Zapata

O. W. Killam's No. 4 Hinnat, Survey 74, located 1,980 feet to SE cor., has been spudded in and is drilling at 150 feet.

Dale Field—Caldwell County

Magnolia Petroleum Co.'s No. 1 Taylor, G. W. James Survey, 150 feet to NW cor., is fishing at 1,035 feet. The Texas Company's No. 3 Beatty, Nich Kelly Survey, 150 feet to southeast and southwest lines of lease, has derrick up; No. 1 Lackey, Nich Kelly Survey, 150 feet to NE and NW lines of lease, is drilling in; No. 2 Lackey, Nich Kelly Survey, 450 feet to northeast lines of lease and survey and 150 feet to northwest lines of lease, is rigging up; No. 3 Lackey, Nich Kelly Survey, 750 feet to northeast lines of lease and survey and 150 feet to northwest lines of lease, topped Serpentine at 2,090 feet; topped chalk at 2,145 feet and is standing. The Texas Company and Humble company's No. 3 Clingensmith, Squire Damon Survey, 300 feet southeast of No. 2, Serpentine topped at 1,966 feet, total depth 2,080 feet, bailed down half way and could not lower, ran tubing to put on pump and well began to flow. William F. Morgan, Inc.'s, No. 1 Osteen, W. C. Swearingen Survey, 150 feet to northwest lines of survey and 150 feet to southwest lines of lease, bailing some oil at 2,217 feet in Serpentine topped at 1,980 feet, and test is not complete; No. 1 Moore, G. Jasper Gilbert Survey, 150 feet to northwest lines and northwest lines of Moore lease, in chalk at 2,222 feet and standing. Wheelock & Collins' No. 1 Beatty, Nich Kelly Survey, 150 feet to center of southeast lines, is location; No. 2 Beatty is location 300 feet northwest of No. 1; No. 3 Beatty is location 300 feet northwest of No. 2; No. 4 Beatty is location 300 feet northwest of No. 3.

Luling Field

Magnolia Petroleum Co.'s No. 15 Proctor, J. Henry Survey, NE cor., is drilling at 1,800 feet. North & South's No. 1 Kelly is drilling at 7,120 feet; No. 2 Tiller is drilling at 6,650 feet.

Medina County

Mid-Kansas Oil & Gas Co.'s No. 1 Nixon, Survey 13¾, located 500 feet to west line and 537 feet to NE lines, has set surface casing at 60 feet; No. 2 Nixon, Survey 13¾, is location offsetting Western Gas & Fuel Co.'s No. 2 Nixon in Survey 119. Witherspoon Oil Co.'s No. 1 Fasseler, Survey 799, located 550 feet to east line and 1,350 feet to south lines of lease and survey, at 1,410 feet, total depth and on top of chalk shows oil at 1,360-65 feet, estimated at few barrels, with liner set from 924 to 1,410 feet; No. 4 Nixon (Special) Survey 119, is underreaming at 223 feet to set 8-inch casing.

White Point—Nueces

Sexat Oil Co.'s No. 4 Dunn, 300 feet south of Bay, has set casing at 2,300 feet; No. 2 Meaney, 730 feet to east line and 218 feet to south line of tract, is coring at 3,500 feet; No. 2 Weil is shut down at 2,360 feet.

Refugio Gas Field—Refugio

Houston Gulf Gas Co.'s No. 3 W. Heard has set 10-inch surface casing at 400 feet. Houston Oil Co.'s No. 2-A Rooke is drilling at 2,600 feet. Houston Gulf Gas Co.'s No. 2 Moody is drilling at 1,450 feet.

Kingsville Field—Kleberg

Houston Oil Co.'s No. 1 Kissman, Section 41, Block 9, total depth 3,200 feet, is plugging back to test sand at 1,950 feet. Humble Oil & Refining Co.'s No. 2 Sexauer, Section 41, Block 11, located 200 feet to south line and 100 feet to east line, has been mudded off at 1,957 feet and is under control.

SOUTHWEST WILDCATS

(Continued from Page 41)

recently started by O. W. Killam, who discovered the Mirando Field in the first place. Killam has become a convert to the idea that there is deep production in the Mirando district, an idea borne out partly by showings of gas and oil in deep wells, and is determined to carry down every well he drills from this on where there is any reasonable hope of profiting by it. Relatively few deep wells have been drilled in that territory.

He is now working on one well at the town of Bruni, in Webb County, that was a 7,000,000-foot gasser at 2,316 feet, has a well started in Survey 585, in the edge of Webb County, and just west of the O'Hern & Seacord Pool in Duval County, another in the Cole Field, Block 6, Survey 11, another in Zapata County just north of the Mirando Valley Pool, and still another in Jim Hogg County, in the San Antonio Baluarte grant.

Duval County

Schlessinger Oil Corp.'s No. 1 Moody, Survey 60, located 330 feet to north line and 1,650 feet to east line, at 2,396-2,401 feet tested some oil and gas and is preparing to set casing. National Oil Co.'s No. 1 Ball, Survey 16, located 450 feet to north line and 150 feet to east line, is building roads to location.

Jim Hogg County

Paizano Oil Syndicate's No. 1 Campbell, Las Vivoritas grant, is setting casing at 1,500 feet. O. W. Killam's No. 1 Canales, A. Canales tract, San Antonio Baluarto grant, is location. Holden and others' No. 3 Jones, Share 27, Block 136, is standing. Hamilton and others' No. 1 Holbien, Block 44, at 158 feet to south line and 363 feet to west line, is preparing to resume drilling.

Starr County

Harston and others' No. 1 H. Guerra, Survey 43, located 2,400 feet to south line and 2,000 feet to west line, is rigging up. T. W. Foltz and others' No. 1 well, Survey 301, located 150 feet to northwest lines and 2,400 feet to west line, is preparing to spud in. Milham Corp.'s No. 2 Salinas, Porcion 111, is standing at 5,033 feet in blue shale.

Bexar County

Allen Burnam's No. 1 Ward, A. A. Gardiner Survey, 1,200 feet to east line and 325 feet to south line, at 318 feet hit gas pocket which blew mud out of hole.

Bee County

D. Hewitt's No. 1 G. A. Ray, 1½ miles northeast of Pettus, is drilling at 1,800 feet; No. 2 Ray is having derrick timbers unloaded at Pettus. Nichols & White's No. 1 Hicks, Block 19, NW cor. is shut down at 1,408 feet. Red Ant Oil & Gas Co.'s No. 1 Perry & Chesnut, B. Q. Hadley Survey, 450 feet to east line and 1,600 feet to south line of farm, at 240 feet, has set surface casing.

Caldwell County

Calco Petroleum Co.'s No. 2 Thomas, located 600 feet southeast of No. 1, at 1,820 feet is shut down. Detex Oil Co.'s No. 1 Hardeman, 4 miles north of Luling, is at 2,987 feet. Ratcliffe's No. 1 J. L. New, James Hindes Survey, 150 feet to west line and 600 feet to south line, is trying to take core at 2,500 feet. Sutton & Smith's No. 1 Carter, G. Hindes Survey, 150 feet to CNL, is fooling around at 2,597 feet; No. 2 Carter is location 300 feet east of No. 1.

DeWitt County

J. W. Allen's No. 1 Roeder is location 12 miles west of Yorktown. Collette Oil Co.'s No. 1 Boldt is location in the James Lasater Survey. Empire Southern Oil Co.'s No. 2 Smith, located three-quarters of a mile west of No. 1, is drilling at 3,000 feet. Hogue and associates' No. 1 well is location west of Williams & Gates' No. 1 Gohmert. McNeil & Matthews' No. 1 Kaiser, A. Dillard Survey, 1,508 feet to NW cor., is coring at 3,939 feet. Williams & Gates' No. 1 Gohmert, G. W. Brooks League, 175 feet to north line and 300 feet to east line, is shut down at 760 feet.

Dimmitt County

Humble Oil & Refining Co.'s No. 1 City National Bank, Survey 654, located 700 feet to north line and 2,000 feet to east line, is drilling at approximately 3,800 feet.

Frio County

F. A. Lain and F. A. Brown's No. 1 Edwards, Hooper & Wade Survey, 920 feet to CNL of survey, is moving out lumber for derrick.

Fayette County

Magnolia Petroleum Co.'s No. 1 Fordtran, J. R. Jones Survey, 200 feet to northeast lines and 1,050 feet to west line, is drilling at 3,920 feet.

Goliad County

Houston Oil Co.'s No. 1 Lott, G. Cortinas Survey, at 2,000 feet to north line and 300 feet to west line, is testing at 2,902 feet; No. 4 Pettus, P. Trevino Survey, 1,200 feet southwest of No. 2, is rigged up. C. W. Simpson's No. 1 Ideus, W. H. Pendleton Survey, 156 feet to north line and 540 feet to west line, is drilling at 1,250 feet with four slight gas showings.

Gonzales County

Dunning & Pierce's No. 1 Wilkerson, R. Ward Survey, is drilling. One-half mile south L. P. Unkel's No. 1 Hampton is drilling at 600 feet with the shallow production struck at approximately 214 feet. Bristol Oil & Gas Co.'s No. 2 Denman, A. Zumwalt Survey, is shut down at 807 feet. L. L. Jones' No. 1 Campbell, Moore & Bridges Survey, SW cor., is shut down at 100 feet. Martin Oil & Development Co.'s No. 1 Preston, Pace

League, at 1,576 feet is bailing and showing little oil and gas.

Guadalupe County

F. A. Lain's No. 1 Weinert, W. K. Estell Survey, 150 feet to CNL, which has been standing for several months at 3,002 feet is preparing to resume. H. H. Temple's No. 1 McAlliser, Edward Kellett Survey, 450 feet to northeast lines and 1,420 feet to northwest lines, is shut down at 1,940 feet.

Hays County

J. E. Rodgers' No. 1 Hohenburg, 2½ miles east of San Marcos, is drilling below 1,740 feet.

Jackson County

Houston Gulf Gas Co.'s No. 5 Druschel is drilling at 1,000 feet in the Edna gas field.

Karnes County

Maurer & Ellis' No. 1 Henke, 600 feet to east line of tract and 500 feet south of railroad, is drilling at 2,000 feet, 400 feet in sticky shale. Reynosa Oil Corp.'s No. 2 Butler, Block 43, located 1,000 feet south of No. 1, at 1,947 feet is keeping water pumped off and gas is showing a little.

Kinney County

Havelin Oil Co.'s No. 1 Weatherby, center, Section 21, Block 5, is shut down at 4,365 feet. Stephens and others' No. 1 Jim Clamp, Survey 346, is shut down at 1,070 feet.

Lavaca County

M. L. Benedum's No. 1 Russek, J. G. Reynolds Survey, Block 38, located 1,060 feet to west line and 210 feet to south line, is drilling at 3,200 feet.

Live Oak County

Delta Oil Co.'s No. 1 McNeil, Jane Curry Survey, is drilling at 1,010 feet. Ed Leack's No. 1 McWhorter, located 175 feet south of Lagarto Creek and 175 feet west of Nueces River, has derrick up and machinery moving in. Simmons Oil Co.'s No. 4 Sartin, Simms tract, is shut down at 2,303 feet; No. 2 Reagan is location 1,320 feet east of No. 1 Reagan.

Medina County

California-Medina's No. 1 Rothe, Survey 1,012, is shut down at 3,270 feet. Medina Oil Co.'s No. 1 Taylor, Survey 135, is drilling at 1,230 feet. R. P. O'Brien's No. 1 Nixon, Survey 531, is standing at 1,007 feet. Cecil Switzer's No. 1 Zerr, Survey 459, west central, is to resume drilling at 3,485 feet.

Maverick County

Johnstone & Hout's No. 1 Whipff, 9 miles from Eagle Pass, is standing at 1,220 feet. Ryan Conosolidated Petroleum Co.'s No. 1 Indio, Survey 14, center, is drilling at 1,733 feet. Rycade Oil Corp.'s No. 1 Chittim, Section 129, Block 7, has most of drill stem out of hole at 5,630 feet; No. 2 Chittim, Section 158, Block 7, located 350 feet to NE cor., is drilling at 250 feet; No. 2 Sullivan is drilling at 5,120 feet in black shale.

McMullen County

Houston Gulf Gas Co.'s No. 2 Fisher, 600 feet west of Frio River and 1,700 feet south of No. 1, is drilling at 200 feet with surface casing set at 150 feet. Nelson & Woods' No. 1 Shiner, Survey 48, Block 74, is standing at 1,750 feet. Sun Oil Co. is continuing to diamond core drill on the Washburn ranch.

San Patricio County

Huber & Crawford's No. 1 Mathis, Block 17, Delgavo Survey, 300 feet to northwest lines and 2,500 feet to southwest lines, is shut down at 2,516 feet. Mission Drilling Co.'s No. 1 Harwood is drilling at 1,365 feet; No. 2 Gage is drilling at 1,950 feet. National Oil Co.'s No. 1 J. E. Sullivan, J. C. McMullen Survey, 500 feet to SW cor., is setting 10-inch casing at 280 feet. George B. Pickett's No. 1 Garrett has set surface casing at 360 feet and shut down on account of titles. Sexat Oil Co.'s No. 9 Rachal is drilling at 1,450 feet; No. 12 Rachal at 1,322 feet to north line and 150 feet to west line, is rigging up. J. E. Walsh's No. 1 Owens, George Paul Subdivision, Block 45, at 150 feet to SW cor., is drilling at 250 feet.

Victoria County

Valley Oil Co.'s No. 1 Stoever, Survey 9, T. & N. O., 500 feet to SE cor., is drilling in gumbo at 718 feet.

Val Verde County

Crusoe Williams' No. 1 Holman, Section 5, Block N, is shut down for casing at 2,940 feet. Douglas Oil Co.'s No. 1 Sellers, Section 82, Block A, is straightreaming at 3,020 feet. East Del Rio Oil Co.'s No. 1 Russell, Section 183, is straightreaming at 3,190 feet. Independent Operators' No. 1 Whitehead, SE SE Section 30, Block 4, is drilling at 3,925 feet. Magnolia Petroleum Co.'s No. 1 Whitehead, Survey 81, is drilling at 3,760 feet in black shale. O. O. Owens and others' No. 1 Mills, Section 128, Block 1, is shut down at 2,820 feet showing 500,000 feet of gas.

Wilson County

Thomas and others' No. 1 Aug. Haese, Survey 124, located 300 feet to NE cor., is testing at 2,357 feet in Edwards.

Zavala County

J. G. Pundt's No. 1 West, Fuentes Survey, NW cor., east of Uvalde, is setting casing at 936 feet to test. B. F. Thompson's No. 1 West, northern part of county, is standing at 228 feet.

LA.-ARK. WILDCATS

(Continued from Page 36)

This company is rigging up for No. 1 (Zulu) Roberson, Section 23. Northwest Louisiana Gas Co. has started drilling in No. 1 Mays, Section 22, now being down around 300 feet. Simms Oil Co. has cemented 6⅝-inch casing at 3,075 feet in No. 1 Dodson, Section 15, and at 3,065 feet in No 2.. The Texas Company has started operations at its new test, No. 1 Wilkerson, Section 36. Atlantic Oil Producing Co.-Woodley & Collins' No. 1 Farrington, Section 23, tested salt water with about 5 bbls. of oil in a formation at a total depth of 3,102 feet. Two and a half-inch tubing is being set with a packer.

Sligo Syndicate is building a derrick for another test in the Sligo district, north of Elm Grove. This will be the second test on the Smith farm, Section 24-17-12. Triangle Drilling Co. has started operations at No. 1 Sentell & Dickson, Section 3-20-14, on the western edge of the parish. Woodley & Collins' No. 1 Lincoln, Section 21-16-10, southeastern Bossier Parish, is drilling at 922 feet.

Caldwell Parish

Southern Crude Oil Purchasing Co.'s No. 8 Caldwell, Section 5-13-5e, has been shut down at 1,350 feet.

Catahoula Parish

S. D. Hunter has started drilling in No. 3 Tensas Delta, Section 4-9-8e. Lochnager Oil & Gas Co. also has started operations at No. 2 Beasley, Section 26-9-6e.

DeSoto Parish

Dixie Oil Co.'s No. 1 Jenkins, Section 9-12-11, is drilling lime at 5,562 feet. Magnolia Petroleum Co. is to deepen No. 1 Logan, Section 17-10-12, Pleasant Hill district. This well was completed last July flowing 25 bbls. Wingfield and associates have a rig up for No. A-1 Robertson, Section 18-10-12, Pleasant Hill district.

Grant Parish

Swope and associates have completed No. 4 fee, Section 18-9-1e, pumping 35 bbls. of oil from a broken sand at 1,590-98 feet.

Natchitoches Parish

Lawson & Phariss have decided not to drill No. 1 Bolton, Section 28-5-6, and have moved away the rig and abandoned the location, but are starting another test in the same section on the Wise land. Ohio Oil Co. is drilling at 3,198 feet in No. 2 L. & A., Section 26-13-6w.

Red River Parish

J. H. Askew has cemented 6-inch casing at 2,475 feet in No. 1 Richardson, Section 25-13-11. Hazlett & Simmons are building a derrick for No. 2 Neeley, Section 1-14-12.

Richland Parish

Aarnes and associates' No. 1 Hawley, Section 3-17-9e, is being reamed to the bottom at 2,587 feet. Gulf Refining Co.'s No. 2 Marshfield, Section 29-17-6e, is drilling shale at 2,257 feet. This company also has started a third test on this lease but in Section 30 and in which 15½-inch surface casing has been cemented at 118 feet. Moody & Seagraves have cemented 6-inch casing at 2,306 feet in No. 1 McCoy, Section 32-16-6e. These operators' No. 1 Jones, Section 15-18-7e, is drilling around 800 feet. They have a derrick up for No. 2 McCoy, Section 30-16-6e. Natural Gas & Fuel Corp. is drilling at 2,250 feet in No. 1 Sartor, Section 20-16-6e. Ruston Drilling Co.'s No. 1 McCoy, Section 30, has been completed at 2,414 feet making an estimated 20,000,000 feet of gas. Standard Drilling Co.'s No. 1 Delta Hardwood Co., Section 22-16-7e, has been shut down at 1,500 feet for title work. Texas-Louisiana Carbon Co.'s No 1. Broughton, Section 1-15-6e, is drilling gumbo at 2,748 feet. Woodley Petroleum Co. and Triangle Drilling Co. are drilling shale at 2,145 feet in No. 1 Hemler, Section 31-18-7e.

Sabine Parish

Arkansas Fuel Oil Co. is reaming to the bottom at 3,393 feet in No. 10 Logan, Section 32-10-13, Pleasant Hill Field. Total depth of the hole at 3,980 feet. This company's No. A-1 Logan, same section, is drilling lime at 3,409 feet. This company's No. 2 Moore, Section 32-10-12, is drilling at 1,700 feet. Foster and associates' No. 1 Nabors, Section 30-10-12, is coring at 3,475 feet. This is the test which staged a gas blow out at 3,275 feet. Frazier and associates' No. 1 Harris, Section 29-10-12, is drilling at 2,160 feet. Magnolia Petroleum Co.'s No. 2 Hall, Section 33-10-12, is in chalk rock at 2,076 feet. This company has a derrick up for another test in the Pleasant Hill district, No. 2 Rembert, Section 32-10-12. A. H. Tarver's No. 1 Long Bell, Section 5-8-13, is drilling at 2,741 feet. H. P. Tate's No. 1 Cook, Section 23-10-11, is drilling at 3,270 feet. L. M. Emlet's No. 7-B Bowman, Section 14-7-14, is reaming to the bottom at 2,789 feet after testing salt water and only a show of oil at 2,776 feet.

Webster Parish

Shreveport-El Dorado Pipe Line Co.'s No. 1 Gamble, Section 33-20-8, is drilling lime at 3,019 feet.

West Carroll Parish

Palmer Corp. has cemented 6-inch casing at 2,678 feet in No. 1 Pioneer, Section 16-20-10e. Phillips Petroleum Co. is coring shale at 2,520 feet in No. 1 Marion, Section 32-20-9e.

Winn Parish

J. C. Long has abandoned No. 1 Milam, Section 28-13-3w. Ohio Oil Co. has cemented 12½-inch casing at 154 feet in No. 1 Edenborn, Section 31-10-4w. This company is to make a sand tester test of a formation at 2,108 feet in No. 1 Rolen, Section 9-12-1w. A location has been staked for No. 2 Rolen, Section 5-12-1w.

ARKANSAS

Union County

Booth and associates have started drilling their No. 1 Roland, Section 8-17-11, eastern Union County. Magnolia Petroleum Co.'s No. 1 Carroll, Section 1-17-14, tested 5,000,000 feet of dry gas with a Halliburton sand tester in a sandy shale formation at 2,975-82 feet. Ohio Oil Co.'s No. 2 Crain, same section, tested 4,000,000 feet of gas and 75 bbls. of oil in a formation at 3,015-20 feet. The test was made with a sand tester of the company's own invention. A string of 6⅝-inch casing is being set in each test, in the latter at 3,007 feet and in Magnolia's at 2,975 feet. Mazda Oil Corp. is arranging to make a Johnson test of a sand at 2,507-19 feet encountered in No. 1 Boyd, Section 9-17-15. Rice and associates are going to set 6-inch casing at 2,920 feet in No. 1 Newton, Section 13-17-16. Total depth of this test is 2,924 feet.

Ouachita County

H. M. Harrell's No. 1 Camden, Section 12-12-18, is drilling hard sandy lime at 1,760 feet. Magnolia Petroleum Co.'s No. B-1 Stout, Section 28-14-16, tested salt water at 2,517 feet and also at 2,520 feet, and now is being reamed to the bottom.

Ashley County

Glassell and associates' No. 1 Keller, Section 10-19-5, is drilling at 2,650 feet.

Calhoun County

Genther and associates' No. 1 Stout, Section 3-14-16, is shut down for rig repairs with the hole down 1,830 feet.

Columbia County

Big Creek Oil Co. is drilling at 760 feet in No. A-1 Runyon, Section 3-16-21

Miller County

Lenz and associates' No. 1 Mann, Section 22-15-26, is drilling at 1,550 feet. Guest and associates' No. 1 M. & P. Bank, Section 30-15-26, still is shut down at 2,860 feet.

ROCKY MOUNTAIN AREA

(Continued from Page 46)

than the Midwest's No. 18SD Parkinson, which had gas in the same horizon and indicates that the Morrison probably is productive on the flanks. It still has more than 150 feet to go before reaching the Sundance which made 2,600 bbls. initial in the discovery well on Iles. The results, in connection with other developments in that area, has rather enthused the operators. The Iles Dome, which was a complete failure in the Dakota in a number of tests, now gives every indication of being an important operation.

The Midwest Refining Co.'s No. 18-SD, SW Section 23-4-92, is bottomed at 3,316 feet in black shale below the Morrison. The hole is making 6,000,000 feet of gas and spraying a little oil from the Morrison sand. This is being mudded off so that a string of 6¼-inch casing can be run and set before drilling into the Sundance. This probably will take another week as it still has 30 to 50 feet to go. The Midwest's No. 4 Parkinson, SE Section 22-4-92, which came in last spring in the Sundance with an initial flow of 2,600 bbls., is making 450 bbls. a day with the valves closed down to the very limits of safety. There is little doubt but that it is a big well and a good one as there has been practically no change in pressure for several. months.

Other Iles Dome wells are making progress slowly. Midwest Refining Co.'s No. 34-Sd, SW Section 22-4-92, is in hard sand at 2,777 feet, and same company's No. 4-SD Shaw, NE, Section 27-4-92, is running 8¼-inch at 2,940 feet. Texas Production Co.'s No. 1 Parkinson, SW Section 23-4-92, is drilling at 3,107 feet. Several tentative locations have been made on the structure, but none of these is expected to get under way until some of the drilling wells are completed.

Moffat Dome

On the Moffat Dome, 5 miles to the northeast of the Iles structure, there are two wells drilling with the Sundance as the objective. The Texas Production Co.'s No. 10 Basil Knowlton, Section 33-5-91, is still being tested at a total depth of 4,265 feet, being bottomed in the Morrison sand. It is now flowing around 100 bbls. a day while being agitated with the tools. The surprise of the week, however, was when the Texas Production Co.'s No. 5 Walter Wick, Section 10-4-91, commenced making oil from the Mowry shale above the Dakota at 4,135 feet. It was drilled to 4,165 feet and the hole has filled 2,000 feet, the oil coming through a bad cave at the bottom. It is being cleaned and a production test will be made. No. 10 Knowlton had water in the Dakota sand. No. 5 Wick, which is one contour lower on the structure than the Knowlton well, was shut down at 3,885 feet while the Knowlton well was carried on down to the Sundance. There was every reason to believe that the Wick well had no chance except in some lower horizon. When oil was found in the Morrison in the Knowlton well, drilling on the Wick was resumed. A faulted condition probably is responsible for the present showing. The shale oil is in larger quantities than was found in some of the best Dakota sand wells on the top of the structure.

The Tow Creek Dome in Routt County yielded a disappointment in the Texas Production Co.'s No. 3 Belle Dennis, Section 8-6-86. This well was started as a test to the Sundance. When it had reached a depth of 3,693 feet without picking up the Dakota and the hole being reduced to 4¾ inches, it was decided to recheck the geology. The result was a decision to abandon the test at the pres-

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ROCK WAUGH DRILLS

ent depth on the theory that the Sundance was too deep to be reached. The company has three other wells drilling in which it is hoped that at least one test can be put down to the Sundance. This structure resembles somewhat the Iles Dome so far as drilling goes, but with better results. Tests found water in the Dakota, but the pool is making around 1,000 bbls. a day from the Mowry shale above the Dakota and the theory is that this oil is migrating from the Sundance.

Rangely Dome

The other Sundance sand test at an interesting stage is the Texas Production Co.'s No. 2 Emerald, Section 31-2-102, Rangely Dome, in Rio Blanco County. This test made 12,000,000 to 14,000,000 feet of gas in a sand supposed to be the Morrison at 3,550-64 feet. The hole was filled with barium to hold down the pressure and drilling was resumed. At 3,673 feet, the hole went out of red sandy shale into sand and is still in the sand at 3,775 feet. The barium is being removed so that a test of the formation can be made. The gas is gradually increasing as the barium is bailed. The well will be allowed to blow to ascertain whether the sand contains oil that may have been sealed off by the heavy fluid run to kill the gas. The sand it is now in is supposed to be the Sundance.

Two completions were reported in Fremont County in the west extension of the Florence Pool, but neither has so far been tested. The Continental Oil Co.'s No. 2 Hall, SW SE Section 35-18-70, reached the pay at 1,930 feet. It is reported good for 200 bbls., but the quantity of oil in the holes in this pool is not a reliable test of production on the pump. The other is W. F. McCormick's No. 1 De Weese, NE, Section 3-19-70, more than half a mile from the nearest producer. It topped the pay at 1,257 feet and has more than 1,000 feet of oil in the hole. This well opens up a new area to the southwest of the west extension of the Florence Pool. It looks as if it may be a 250 to 300-bbl. well.

In Saguache County, in the south-central part of the state, the Joe Cook Oil Co. has made a deal to take over No. 1 State, SE cor. Section 22-41n-10e, near the town of Hooper, and will make an effort to clear the hole of iron and test the area. This well has been drilling for several years, first by the Peoples Oil & Gas Co., then the Valley Oil Co., and subsequently by the Traders Oil, Inc. It is bottomed at 4,310 feet. The pipe twisted off at 1,970 feet and fishing for drill stem and rotary bit is in progress. The hole is reported showing a little oil at the bottom.

Logan County

Northeastern Colorado Oil Co.'s No. 1 State, Section 36-8-55, Willard Dome, Logan County, is temporarily shut down for financing at 5,010 feet. The bottom is supposed to be 200 to 400 feet off the Dakota. Cavy ground has made it advisable to run a string of 4½-inch casing before going any further. The Empire Gas & Fuel Co. recently paid the company $2,000 bonus when the hole reached 4,500 feet, and has agreed to put up $2,500 additional, upon reaching the Dakota should it be dry. This is a very important test as it will decide, if finished, the mooted question of the depth to the Dakota in the center of the Denver Basin.

The Platte Valley Petroleum Co.'s No. 1 Patterson, Section 24-6-61, Greasewood Dome, in Weld County, was reported this week to be 85 feet in a sand at a total depth of 3,285 feet. A chloroform test showed a slight saturation in the sand which is believed to be the Hygiene. If this identification is correct, it probably means that this test will have to go considerably below 5,000 feet to reach the Dakota. This well also is in the Denver Basin about 40 miles southwest of the Willard Dome test and 50 miles southeast of the Wellington-Fort Collins producing field in Larimer County.

The Parker Club's No. 1 Adams, Section 32-34-56, Las Animas County, is drilling at 2,550 feet in red lime streaked with gray after going through a 5-foot dry sand. This is a test to the Pennsylvania and is about due at this depth to develop something interesting. The well cut several water sands at considerably higher levels.

Wyoming

Announcement finally has been made of the location of the test to be drilled by the Producers & Refiners Corp. as a joint operation with the Marland Oil Co. of Colorado on the north dome of the Baxter Basin structure in Sweetwater County. The location is in the NE SE Section 26-20-104, the footage being 1,510 feet north and 998 feet west of the southeast corner. The derrick is now going up and material is being moved in from the abandoned Clay Basin test in Utah. The operation will be watched with considerable interest as it means a further exploration for oil on the Baxter Basin structure which up to this time has yielded gas only. The location is approximately 3 miles north of No. 1 Union Pacific, NW Section 11-19-104, drilled by the same interests and completed in November, 1926, as a gas well. The results in this well was one of the determining factors in the decision to put down another test.

The Baxter Basin Field is in the center of Sweetwater County just to the south of Rock Springs on the Union Pacific Railroad and 20 to 30 miles north of the Colorado boundary. Drilling in the area has been in progress since 1921 and six companies have a developed gas production of about 200,000,000 feet a day. Several tests to horizons below the Dakota have been drilled in the central and southern parts of the field without encountering oil. The gas in different horizons in various parts of the field was found in a number of instances to be dissimilar. The Producers & Refiners and Marland companies drilled the test in Section 11 only 236 feet north of a major fault. It had a small showing of oil and several shows of gas and was completed at a total depth of 3,068 feet. The top of the Dakota was found at 2,941 feet and there were 121 feet of sand. The well gauged 12,587,000 feet of gas with a rock pressure of 1,210 pounds. The gas, of an entirely different quality from that found in other parts of the field, showed better than 98 per cent methane. The well was located near the fault on the theory that the fault had trapped any oil that might be in the north dome. The new test is located on top of the structure.

Salt Creek Completions

Four completions in Salt Creek were reported for the week, two being from the first Wall Creek and two from the Lakota sands. The best was Midwest Oil Co.'s No. 13-L, NE Section 35-40-79, completed at 2,490 feet in the Lakota with an initial production of 477 bbls. It was shut in after being tested as most of the Lakota sand wells are not being produced. Wyoming Associates Oil Co.'s No. 13, SE Section 23-40-79, was completed at 1,515 feet in the first Wall Creek with an initial production of 5 bbls. Same company's No. 24, NE Section 34-40-79, gauged 84 bbls. initial from a total depth of 1,090 feet. Midwest Oil Co.'s No. 18-L, NW Section 25-40-79, was completed at 2,447 feet in the Lakota with an initial production of 90 bbls.

The Carter Oil Co.'s No. 1, NW NE SW, Section 5-48-90, on the No Wood anticline in Hot Springs County, is reported as being abandoned. It had artesian sulphur water in the Embar sand and in the Tensleep at 1,912 feet.

Midwest Refining Co.'s No. 1, NE cor. NE Section 2-47-100, on the Buffalo Basin Dome, in Park County, has been completed as a gas well. The first sand was found at 1,590-1,605 feet and the second sand at 1,650-98 feet. The initial flow was 15,897,000 feet with a rock pressure of 435 pounds.

A new test has been started in Johnson County in Graves & Murphy's No. 1, NW cor. NW Section 10-41-80, on the Pat O'Connor ranch.

Garland Dome Test

Producers & Refiners Corp. has made a location for its No. 3 on the Garland Dome in Big Horn and Park Counties, being on a government permit in the SW NW NE Section 24-56-98. It is on the same section as the company's No. 2 which had a bad fishing job resulting in the hole being plugged back to 1,400 feet and made into a gas well with a capacity of 4,000,000 feet a day. The Garland structure is approximately 10 miles long and 3 miles wide and has a closure of 2,600 feet, being comparable in area with Salt Creek. It lies 30 miles north of the Oregon Basin structure where the Ohio Oil Co. completed a well in the Embar-Tensleep formation last winter which is generally reported good for anywhere from 1,000 to 30,000 bbls. a day, but which is shut in awaiting transportation facilities. The objective of the Producers & Refiners test' on the Garland Dome is the horizon in which oil was found at Oregon Basin. The Ohio Oil Co. drilled the deepest well on the structure, stratigraphically, its No. 2 Cross Gas, Section 33-56-97, which had 40,000,000 feet of gas in the lower Embar at 3,163 feet, where it was completed without reaching the Tensleep.

Producers & Refiners Corp.'s No. 3, Section 2-19-88, on the Hatfield Dome in Carbon County, found some gas in the Dakota at 3,956 feet, and drilling will stop without going on to the Sundance at present, though it may be deepened later. A syphon head is being installed. The Continental Oil Co. is skidding the rig on its No. 1 State, Section 16-51-100. Buck Creek Oil Co.'s No. 1 Delahoyde, NE NE Section 25-37-63, Niobrara County, Ant Hills anticline, which swabbed 250 bbls. a day from a total depth of 3,975 feet until tankage was filled, has resumed drilling after casing off the oil to continue the test, is down 3,993 feet and has found nothing new.

Utah

The Midwest Refining Co.'s No. 2 Ashley Creek, NW NE SW Section 23-5-22, in Uintah County, Utah, is to be carried down to the Park City formation in the Permian and Pennsylvanian series if commercial production is not developed in the upper horizons. The results in the Park City formation, if the well ever goes that deep, probably will have an important bearing on prospecting not only in northeastern Utah, but in northwestern Colorado. The Park City is expected in the Ashley Creek well at around 4,000 feet.

The Utah Oil Refining Co. drilled the first well in that area in 1925 in its No. 1 Ashley Creek, SW Section 25-5-22, and had a flow of 60,000,000 feet of gas in the Morrison below the Dakota, at 1,685 feet. The well was shut in as a gasser and no further operations were attempted, the Dakota having been found barren. Following the discovery of oil in the Sundance sand on the Iles Dome in Moffat County, Colorado, last spring, it was decided to go back into the Ashley Creek area and make another test with the Sundance as the objective at 1,900 feet. If the Sundance is not productive, the intentions are to go on down.

The importance of this decision lies in the fact that while oil has been found in the Sundance in northwestern Colorado, the geologists are not convinced that it originates in that horizon. Julian D. Sears, of the United States Geological Survey, in Bulletin 751-G on parts of the northwestern Colorado and southwestern Wyoming region, published in 1924, expresses the opinion that oil and gas may have originated in the fossiliferous Twin Creek limestone, but that the formation should not be made the objective of drilling operations. The horizon he calls the Twin Creek is generally given the name of the Sundance for lack of definite correlation up to this time. On the contrary, Sears says, oil and gas probably have originated in the Park City and migrated upward. The Ashley Creek well may be the first test to reveal any clear data on the question. It was impossible to get samples from the Midwest's Iles well when it drilled into what is called the Sundance on account of the gas flow that preceded the oil.

Carbon County Failure

Another failure was reported from Utah this week. The McGee & Holmes Syndicate's No. 1, Section 14-15-10, 4 miles southeast of Price in Carbon County in the central part of the state, is being abandoned at 2,464 feet. It went through a dry sand topped at 2,225 feet and was in another dry sand when operations were suspended and the drillers commenced pulling the casing.

Midwest Exploration Co.'s No. 1 Hughes, Section 30-24-19, Elk Ridge Dome in San Juan County, is drilling in lime at 3,780 feet. Texas Production Co.'s No. 1 Shipley, Section 5-27-14, Sweetwater Dome, is cleaning out at 650 feet, and the Union Oil Co. of California's No. 1 State, Section 16-30-25, Lisbon Dome, is drilling below 4,250 feet in limey shale formation. Utah Southern Oil Co. has not yet commenced making new hole with its diamond drill equipment on the east anticline in San Juan County in its No. 1 Canyon, and the other wells show practically no change since last week.

Montana

The Kevin-Sunburst Field in northern Montana reports a number of completions during the past week, but none out of the ordinary. The Homestake Exploration Co., a subsidiary of the Texas Pacific Coal & Oil Co., completed three wells on the west side of the school section, 36-35-2, Nos. 39, 40 and 41, notable chiefly because they improved the status of the west side of the section. No. 39 and No. 40 flowed when agitated, and No. 41 was standing with 500 feet of oil in the hole at last report. The Queen City Oil Co. drilled in its No. 25 in the once famous Moore Pool, toward the north end of the field, and has a 50-bbl. well. This well is in Section 4-34-2. The "56" Petroleum Corp.'s No. 32 Caine, reported in the sand last week, is expected to make a 100-bbl. producer. The Adams Oil Co.'s No. 14 Haskins, in Section 33-35-1, is reported in, a 20-bbl. well, and the General Oil Co.'s No. 2 Hagerty in Section 13-34-2 will also make a 20-bbl. well. The California Co.'s No. 8 Newman, listed as a commercial producer but not yet tested, is of interest as the production is coming from the Madison limestone at a depth of from 1,524 to 1,528 feet, more than 100 feet below the Ellis-Madison contact.

Gas Consolidation?

The Wildrose Oil Co.'s No. 2 Hector, in Section 34-34-1, came in a 15,000,000-foot gas well, being the largest gasser ever completed in that part of the field. The Northern Natural Gas Development Co. also reports another gas well, No. 1 O'Hearn, in Section 1-32-2. There is some talk of a consolidation of gas producing companies operating in the northern part of the state as a result of the proposed construction of a gas line to Great Falls, and it is probable that other gas-producing areas outside the Kevin Field proper will be affected by such a consolidation, and connected up with the new line.

The Hope Engineering Co. expects to deliver gas to Great Falls by Christmas, according to Robert J. Lindsey, vice president of the company, who was in Great Falls last week. A survey of the marketing situation was made by F. A. Freeman of Portland, E. S. Lewis of Pittsburg, and Paul Camp of Portland, who were in Great Falls last week accompanied by an engineer. It is understood that these men represent interests who are financing the project, in part. Preparations for actual construction are going ahead steadily and work should begin at an early date.

Complaint has been filed with the Montana Public Service Commission by the Skelly Pipe Line & Refining Co., charging that the rate of 17½ cents a barrel on oil carried from the Kevin-Sunburst Field to Shelby by the Illinois Pipe Line Co. is discriminatory. A hearing will be held.

Leases in the vicinity of the new Bannatyne Field are still in demand, the Montana State Land Board having received 22 applications in one day, last week. All state land in the immediate vicinity of the wells was taken long ago, but applications are still coming in for acreage lying a considerable distance from the field as mapped. It is reported that the Genou well No. 2 is increasing in gas pressure and has flowed at the end of the 12-hour pumping period. The wells

(Continued on Page 179)

CANADIAN FIELDS

(Continued from Page 46)

3w5, is reported to have resumed drilling at 4,102 feet, after being shut down waiting for a brake band. Dolomite Oils, LSD 8, Section 1-20-3w5, is at 1,850 feet and running the 12½-inch casing, which will be set at this depth.

Okalta Oil's No. 1, LSD 1, Section 1-20-3w5, is reported to have resumed drilling after cementing the 10-inch casing at 3,800 feet.

Greater Gas Supply

Development of the Turner Valley Field has added enormously to the potential natural gas supply. The only immediate market for the gas production is Calgary and the other communities on the Canadian Western Natural Gas, Light, Heat & Power Co. system. This company is stated to have already an available open flow from wells connected with the pipe line of 102,000,000 feet a day. The winter peak load for Calgary is stated to be approximately 35,000,000 feet a day. The open flow of 102,000,000 feet is, of course, not actual delivery of gas; indeed, with friction and leakage through the long pipe line approximately half the amount of open flow would be nearer the actual delivery. The open flow comprises the following production:

Turner Valley, Royalite No. 4, 20,000,000 feet.
Royalite Nos. 1 and 3, 3,000,000 feet.
Foremost Field, 55,000,000 feet.
United Oil's No. 1 well, 8,000,000 feet.
Bow Island Field, 15,000,000 feet.
Chin Coulee Field, 1,000,000 feet.

Two Wells Drilling

Additional production may be forthcoming this season from two wells now drilling, the Canadian Western No. 8 in the Foremost Field and the Gas Production and Transportation's No. 1 near Warner. Canadian Western's No. 8 is practically certain to be a large gasser; while the results from the other well are problematical. In the Turner Valley, three new units are being added to the scrubbing plant, which will increase its capacity to 28,000,000 feet a day.

The Canadian Western last year had a peak load of 32,000,000 feet a day, but as 1,000 additional customers have been taken on this year, there is an increased demand for gas for heating, and most of the Calgary industries are now using gas. The towns of Stavely and High River have been added to the Canadian Western system, which also includes Calgary, Lethbridge, Macleod, Nanton, Claresholm, Granum and Okotoks.

In this connection it is reported that a project for utilizing the waste gas from the Turner Valley Field will be tried out next summer. With most of the deep wells in the Turner Valley it is found impossible to shut in the gas entirely, and a portion of the production has to be piped some distance from the wells and burned. The new project is to force this gas under pressure through the lines to the wells in the old Bow Island Field. The latter field, which at one time had an enormous production, has in the past 15 years undergone a marked depletion and has latterly been held in reserve for the greater part of the year. It has produced an estimated aggregate of 35,000,000,000 feet of gas since it was opened. It is believed that the Turner Valley waste gas could be forced into these sands and in this way a great deal of waste eliminated and a further gas reserve built up.

Southern Foothills

In the southern foothills, Imperial Oil, Ltd. Highwood's No. 1, LSD 3, Section 36-18-3w5, is at 3,290 feet and drilling.

In the Moose Mountain district, Signal Hill Oil Co.'s No. 2, LSD 9, Section 34-23-5w5, is getting ready to resume drilling at 1,450 feet. The 10-inch casing will be run to this depth. Just before No. 2 was shut down a small show of high-grade crude was met, and this will be tested as soon as the casing is run.

In the Morley Reserve area, Gold Coin Oils has made a new contract with the drilling company and resumed drilling at 3,502 feet. The previous contract, it is understood, called for 3,500 feet of drilling. On the southwestern part of the Morley Reserve, between the Wabash Oils' test and the Kananaskis River, two additional tests will, it is understood, be spudded in by Calgary interests this fall. The locations will be on the Lea lease. Wabash Oils has cemented casing and will shortly resume drilling in the Kootenay formation, where some fair shows of oil and a little gas were encountered at comparatively shallow depth.

In the Turner Valley Field, British Dominion Oil Corp., LSD 4, Section 5-20-2w5, is reported drilling close to 6,000 feet. Regent Oil Co., LSD 16, Section 1-20-3w5, has resumed drilling after cementing casing at 2,710 feet. Stockmen Oils' No. 1, LSD 1-2, Section 27-30-3w5, has resumed drilling at 5,300 feet after cementing casing.

Irma-Wainwright

In the Irma-Wainwright Field, east central Alberta, Edmonton-Wainwright Oils' No. 1, LSD 4, Section 29-45-6w4, has recovered all the lost tubing and has been again put on the pump. The well has a steady production of 30 to 35 bbls. a day which is sold locally, unrefined, for tractor fuel at $1 per barrel at the well. British Petroleum's No. 3-B, LSD 4, Section 29-45-6w4, is pumping oil to the Interior Oil Co. plant for fuel for drilling, the production commanding the same price. Interior Oil Co., Section 36-44-7w4, has released the 8¼-inch casing and resumed drilling. The drill is now reported at 1,925 feet and close to the oil sand.

Western Consolidated Oils' No. 2, Section 30-45-6w4, is being abandoned at 2,333 feet. This test some months ago reported a show of oil and was apparently in the top of the sand. A string of tubing 1,300 feet long and the tubing catcher dog later jammed in the hole, making it impossible to drill deeper. The bottom of the hole is being cemented to shut off the water. It is possible that the drillers will now go ahead and complete Western Consolidated No. 1, LSD 8, Section 29-45-6w4, which has been standing at 1,400 feet.

British-Wainwright Oils' No. 1, LSD 4, Section 22-45-6w4, has been cemented on top of the oil sand at 2,222 feet and will now be drilled into the sand.

Mid-Canada Oils, Section 35-45-6w4, is rigged up and waiting for tanks to hold the fuel oil, which will be trucked from other producing wells in the field. The test may spud in before the end of September. Pat Adams is in charge of the drilling. National Exploration Co., LSD 1, Section 30-45-6w4, is shut down owing to heavy gas pressure, which so far has prevented the drillers carrying the test down into the oil sand.

Pincher Creek

In the Pincher Creek district, Mount Royal Oil & Gas Co.'s No. 1, LSD 4, Section 7-6-1w5, is reported again shut down.

In Saskatchewan, Unity Valley Oil Co.'s No. 1, SE Section 23-41-24w3, is reported drilling at 2,925 feet in a series of limestone bands alternating with shales. Several small shows of oil have been encountered in this formation. South of Kenaston, the Big Six Oil Co. of Saskatoon is rigging up with a cable tool outfit for a test. At Simpson, the Simpson Oil Co., Section 9-29-28w2, is drilling close to 800 feet. On the eastern end of the Ribstone-Blackfoot structure, the London Ribstone Oils, LSD 14, Section 10-43-28-w3, is shut down at 255 feet waiting for casing. In the Riverhurst district, the Riverhurst Oil & Gas Co.'s test, LSD 4, Section 33-22-7w3, is shut down at 518 feet.

In Manitoba, the Irro Oil & Gas Co.'s No. 2, LSD 11, Section 18-26-23w1, is shut down at 136 feet after encountering a heavy water sand. This test was located close to the Irro No. 1 (Grandview) well in which oil was reported to have been struck last fall and which was later the subject of investigation by Federal petroleum engineers. In the Ochre River district, the Mack Oil & Development Co., LSD 12, Section 39-22-17-WPM, is shut down at 448 feet.

Saskatchewan

Ribstone-Wainwright Oils, Ltd., has camp built and is rigging up for a test near Readlyn, Saskatchewan. The company is using an 86-foot heavy duty derrick and a heavy California string of tools and is planning to carry the test to 3,500 feet if necessary. On the Ribstone Blackfoot structure, Ribstone Oils, LSD 1, Section 1-46-1w4, is at 1,925 feet and cementing casing. Apparently this test is near the top of the sand in which Imperial-Ribstone's No. 1 got a show of heavy oil at 1,900 feet.

In the Skiff Field, southern Alberta, Devenish Petroleums' No. 1, LSD 5, Section 27-5-14w4, is working on casing at 3,130 feet. It is reported that Illinois-Alberta Oil & Refining Co. is taking over 1,280 acres in this area from the Devenish-Hendricks interests and will drill one or more tests.

In the Cypress Hills district, Eagle Butte Oil Co., LSD 3, Section 31-7-4w4, is reported drilling. In the DeWinton district near Calgary, Anglesey-Lakeview's No. 1, LSD 1, Section 22-21-1w5, is drilling at 708 feet. Near Olds, the Coates Syndicate, LSD 13, Section 28-32-1w5, is shut down at 286 feet.

In the Warner district, Gas Production & Transportation's No. 1, NE Section 21-4-18w4, is hauling lumber to rebuild the derrick destroyed by fire some weeks ago when the test was at approximately 460 feet. Several of the drillers who were burned in the fire are at work again.

Northern Ontario

In northern Ontario, important tests for oil have been undertaken in the Matagami Valley area. Work was started earlier in the summer, and it is expected that definite results will be known by the end of October. The area was examined some years ago by Dr. M. Y. Williams of the Geological Survey of Canada in the course of a general investigation of oil possibilities in the James Bay district.

In Elgin County, Ontario, the United Development Co. of Chatham is reported to be leasing acreage near St. Thomas and will drill for oil and gas. Negotiations have been opened with the city of St. Thomas to supply gas to that city, the company either to take over the municipal plant or in the alternative to deliver gas to the municipal system at the city limits.

GULF COAST FIELDS

(Continued from Page 48)

duction Co. abandoned locations for No. 3 Banker and No. 4 J. C. Bay. Gulf company's No. 6 Chase, S. F. Austin Survey, made 50 bbls. initially from 1,268 feet. Hyde Production Co.'s No. 4 Banker made 10 bbls. initially from 392 feet. Same company's No. 1 J. C. Bay, S. F. Austin Survey, topped the cap at 430 feet and was abandoned in salt water at 438 feet. Wallace and Miller's No. 1 Ueckert was dry and abandoned at 425 feet. Weed Gayle Oil Co.'s No. 8 J. C. Bay, S. F. Austin Survey, pumped 200 bbls. initially from 422-25 feet. Same company's No. 9 J. C. Bay tested salt water at 441 feet and was abandoned. Same company's No. 10 J. C. Bay was a 50-bbl. pumper at 438-40 feet. Ingram Prospecting Co.'s No. 1 Mensing was drilled to 831 feet and shut down.

Miscellaneous Counties

In Austin County, the Humble Oil & Refining Co.'s No. 1 Gotoskey had sand showing oil at 1,108-14 feet; same company's No. 1 Washington is temporarily abandoned at 1,063 feet. In Colorado County, and 1½ miles southeast of Ellinger, Merritt Drilling & Developing Co.'s No. 1 R. A. Svreck is rigging up standard tools at 480 feet. One mile north of Altair, R. E. Wadrop's No. 1 Tait is drilling at 1,500 feet. Wright Brothers' No. 6 Drushel is a rig. At Brenham in Washington County, C. A. Deward's No. 1 Lehman is shut down at 2,730 feet. Pratt-Hewitt Oil Co.'s No. 1 Konieczny is shut down at 3,000 feet. Three miles southwest of Bryan in Brazos County, Rio Bravo Oil Co.'s No. 2 M. Lanza was dry and abandoned at 2,635 feet. At High Island, in Chambers County, McLean-Sun Oil Co.'s Nos. 6 and 10 Cade are to be deepened. In the same county and at Barbers Hill, S. T. Hindman and associates' No. 1 Fisher has been spudded, and Humphreys Corp.'s No. 5 Kirby had a showing of oil at 4,086 feet.

LOUISIANA GULF COAST

Acadia Parish

In the Evangeline Field, Cline-Smith-Cline's No. 1 Cline set 30 feet of 4½-inch strainer at 1,750 feet and is pumping 150 bbls. daily. Coastal Oil & Fuel Co.'s No. 95 Crowley fee is drilling gumbo at 1,720 feet. The Texas Company's No. 2 Rayne heirs is drilling at 2,793 feet. Same company is rigging up No. 2 Latrielle-B to drill deeper. Latrielle Oil Co.'s No. 1 Yount Lee bailed salt water at 2,300 feet. Yount Lee Oil Co.'s No. 1 Latrielle is drilling at 2,700 feet. Fred I. Getty Oil Co.'s No. 2 Jennings-Clement is flowing 50 bbls. from 2,310 feet. Evangeline Oil Co.'s No. 1 Conklin is a derrick.

Calcasieu Parish

In the Edgerly Pool, the Rex Petroleum Co.'s No. 7 Hunter is flowing 1,000 bbls. daily from 3,760 feet. Hercules Oil Co.'s No. 1 Paraffine is pumping 100 bbls. from 3,500 feet. Gulf Production Co.'s No. 8 Industrial Lumber Co. is a rig. Same company's No. 3 Robert Lincoln fee and No. 10 Higgins-B are being rigged up. At Stark Dome, the Gulf company's No. 7 L. M. Lumber Co. is a rig. McDaniels and Ellis' No. 1 Ecker tested salt water at 4,000 feet, sidetracked out of the 7-inch pipe at 3,460 feet and tested dry at 3,505 feet and is being sidetracked at 3,160 feet. Wilson-Broach's No. 5 Wilson is drilling at 1,625 feet. Location was made for Davis and Walker's No. 1 Lyons in Edgerly. At Sulphur, Union Sulphur Co.'s No. 721 fee is drilling hard sand at 3,175 feet.

At Lockport, the Vacuum Oil Co.'s No. 8 Miller, which is being drilled deeper, is drilling at 4,400 feet. No. 17 Miller is drilling at 4,350 feet, and No. 18 Miller is drilling at 4,375 feet. A road to the location for No. 3 Farquhar is being built. No. 5 is drilling at 5,575 feet. No. 5 Bordages is drilling at 3,575 feet. Vacuum company's No. 1 fee-A is drilling at 3,250 feet. A derrick is being built for No. 4 Bayou D'Inde. No. 2 Frieberg and Woolf is drilling at 5,110 feet. At Vinton, Marrs McLean's No. 12 Gray is a derrick. Vinton Petroleum Co.'s No. 7 Rescue is drilling at 2,900 feet, and No. 60 Gray is sidetracking at 1,760 feet. Gulf Refining Co.'s No. 43 Star-Vincent is drilling at 1,500 feet.

Cameron Parish

Pure Oil Co.'s No. 4 Sweet Lake, in the Sweet Lake Field, made several heads from a total depth of 5,141 feet and the liner is being set. No. 5 Sweet Lake cored sand at 5,120 feet and is being cored ahead. No. 2 Sweet Lake is cleaning out and washing at 5,100 feet. No. 3 Sweet Lake is being worked over at a total depth of 5,897 feet. Yount Lee Oil Co.'s No. 5 State Black Lake, at Hackberry, is drilling at 3,510 feet. In the same area, the Calcasieu Oil Co.'s No. 2 Caldwell is drilling at 1,500 feet.

Miscellaneous

At Fausse Point, Gulf Refining Co.'s No. 1 Broussard is drilling at 3,710 feet in Iberia Parish. Border's No. 1 Vermillion Bay was abandoned in gumbo at 3,214 feet. Calcasieu Oil Co.'s No. 1-A Schwing is drilling at 3,415 feet. At Thibodeaux, in La Fourche Parish, Gulf Refining Co.'s No. 1 Dibert-Stark is reaming after the hole caved at 352 feet. In St. Martin Parish, Rycade Oil Co.'s No. 1 Atchafalaya is drilling at 3,843 feet. Louisiana Exploration Co.'s No. 1 W. Cote Blanche is reaming at 1,800 feet.

DEATH OF W. A. SIMPSON

CHATHAM, Ontario, Sept. 24.—Word has been received here of the death at Vancouver, B. C., of William Ashton Simpson, formerly a drilling contractor at Petrolia, in his 79th year. Mr. Simpson drilled extensively in foreign fields, including several years spent in Germany and four years in New Zealand as manager of the Tankard Petroleum Co. Later he spent 10 years drilling for water in Saskatchewan, retiring from business about 18 months ago. A wife and one daughter survive.

WILDCAT OPERATIONS IN PANHANDLE

(Continued from Page 32)

DEAF SMITH COUNTY

Julien & DeGrace's No. 1 Mrs. R. A. Hindley, Sec. 47, Blk. K-8 ..... S.D., 520 ft.
Red Hill Oil Corp.'s No. 1 Barrett, Sec. 92, Blk. K-4 ..... S.D., 710 ft.

DONLEY COUNTY

A. T. Drlg. Co.'s No. 1 F. H. Harington, Sec. 39, Blk. 3-C ..... 1,200 ft. water, 3,115-32 ft; show gas, 3,140-60 ft; dry granite wash, 3,260-93 ft; S.D., 3,498 ft.

DICKENS COUNTY

Bowser Mickels et al's No. 1 Pitchford ranch, Sec. 1, Blk. 1, Sam Lazarus Sur. ..... S.D., 3,355 ft; cor. depth; T.A.

FLOYD COUNTY

Explth. Co.'s No. 1 S. H. Boone, C. C. H. Johnson Sur... Spudded and S.D.
Explth. Co.'s No. 1 Land & Cattle Co. ..... S.D., 780 ft. for orders.

GRAY COUNTY

Amogray Oil Co.'s No. 1 A. Chapman, SW NW SW, Sec. 9, Blk. 26, H. & G. N. Sur. ..... 2,000,000 ft. gas, 2,150-55 ft; moving boiler back.

Atlantic O. P. Co.'s No. 1 Combs & Worley, NW cor. NE Sec. 39, Blk. 3 ..... T.D., 3,085 ft; shot 560 qts., 2,-947-3,052 ft; sprayed 30 bbls. 24 hrs. and went dead; T.D., 3,-165 ft; plugged back to 3,115 ft.

Archer, Blake et al's No. 1 Turneau, Sec. 111, Blk. 2-B.. Spudded and S.D; temp. abd.
Amos et al's No. 1 Crews, NW cor. Sec. 9, Blk. 25..... Shot with 300 qts., 2,720-2,815 ft; T.D., 3,005 ft., bridged and spraying 10 bbls. per day; installing pump.

Bay Shore Oil Co.'s No. 1 C. W. Bradford, Sec. 143, Blk. 2-B ..... Killed gas, fish. for bit, 2,668 ft.
British American Oil Co.'s No. 1 J. M. Patton, Sec. 61, Blk. B-2 ..... Rigged and S.D.; temp. abd.
Camel Oil Co.'s No. 1 Harrah, Sec. 162, Blk. 3, I. & G. N. Sur. ..... Drlg., 2,010 ft.
Cole O. & G. Co.'s (was Magdalene Oil Co.'s) No. 1 J. E. Williams, Sec. 17 Blk. 1 ..... S.D., 3,860 ft.
Danciger et al's No. 1 Jackson, NW cor. Sec. 88, Blk. B-2. Set 8-in., 2,477 ft; show gas, 2,530-2,625 ft; 10,000,000 ft. gas, 2,-682-2,800 ft; drlg., 2,903 ft.

Delaney et al's No. 1 Jackson NW cor. E ½ SW, Sec. 88, Blk. B-2 ..... 8,000,000 ft. gas 2,,515-80 ft; sprayed little oil from granite wash, 2,844-57 ft; running liner.

Donley Gray Oil Co.'s No. 1 J. W. Gordon, Sec. 79, Blk. 3 ..... Drlg., 3,350 ft.
Jack Doyle's No. 1 D. W. Osborne, SE cor. Sec. 109, Blk. 3 ..... Rig.
Edwards et al's No. 1 E. J. Case, NE cor. Sec. 182, Blk. B-2, H. & G. N. Sur. ..... Cmt. 12-in., 1,340 ft; drlg., 2,300 ft.
Empire G. & F. Co.'s No. 1 Sarah George, Sec. 151, Blk. 3, I. & G. N. Sur. ..... Drlg., 1,110 ft.
Empire G. & F. Co.'s No. 1 I. B. Hughey ..... To drill deeper from 3,225 ft.
Gibson Oil Co.'s No. 1 Bowers, Sec. 92, Blk. B-2..... 2,500,000 ft. gas, 2,560-2,675 ft; 20,000,000 ft. gas, 2,780 ft; T.D., 2,810 ft; cmt. 8-in.

Gladis Gray's No. 1 Colebank-Morse (was Foster et al's No. 1 G. Cutebank), SW cor. NE Sec. 65, Blk. 25.... 2,905 ft., T.D; plugged back to 2,803 ft; shot 160 qts, 2,430-2,-510 ft; 1,200 ft. oil in hole; bailed dry; shot 600 qts., 2,479-2,525 ft; C.O; swabbing 25 bbls. daily.

Gray County Pet. Co.'s No. 1 Herndon, Sec. 147, Blk 3.... Hole full salt water, 2,420 ft; S. D., 3,630 ft; no show oil or gas.

Lefors Pet. Co.'s No. 1 Leach, Lefors Townsite..... Drlg., 2,010 ft.
H. C. McCauley et al's No. 1 J. Morse..... Rig.
Magnolia Pet. Co.'s No. 1 Archer..... 6,000,000 ft. gas; drlg., 3,138 ft; show oil.

Magnolia Pet. Co.'s No. 1 H. Heitholt..... C.O, 3,288 ft.
Midwest Explth. Co.'s No. 1 J. A. Hood, SE cor. SW, Sec. 33, Blk. 3, I. & G. N. Sur. ..... T.D., 3,044 ft; swabbed 107 bbls. after shot, 180 qts., 2,953-87 ft.
Needigate et al's No. 1 A. Chapman, NE cor. E half SE Sec. 52, Blk. 25 ..... 500,000 ft. gas, 2,760-65 ft; rainbow of oil, 2,820-25 ft; salt water; granite wash, 2,827-28 ft; S.D., 2,835 ft.

Operators Oil Co.'s No. 1 Jackson..... Rig.
Operators Oil Co.'s No. 1 Bowers, NE cor., Sec. 35, Blk. 3, I. & G. N. Sur. ..... T.D., 2,850 ft; 20,000,000 ft. gas.
Pampa Oil Co.'s No. 1 W. R. Campbell, Sec. 90, Blk. 3... Drlg., 3,350 ft.
Pampa Pet Co.'s No. 1 Mary Leopold, Sec. 141, Blk. 3... Water, 3,220-60 ft; slight oil show in granite wash, 3,572-75 ft; S. D., 3,700 ft; fish. pipe.

Purple Sage Oil Co.'s No. 1 Johnson, Sec. 5, Rockwell County School land ..... First oil show, 2,645 ft; water, 2,-660 ft; show oil in gran. wash, 2,790-95 ft; 8-in. cas. set., 2,803 ft; show gas, 2,814 ft; shot 300 qts. at 2,846-94 ft; T.D., 3,208 ft; will probably plug.

Riley & Heck's No. 1 Mrs. Hopkins, Sec. 66, Blk. 2-B... Flow and swabbed 20 bbls. for week from gran. wash, 3,000-10 ft; T.D., 3,303 ft; S.L.M; may deepen.

Rensoul Pet. Co.'s (was Salisbury & Reynolds') No. 1 M. Huselby, C SE NE NE Sec. 65, Blk. 25, H. & G. N. Sur. ..... Flow. 40 bbls. daily from granite wash topped, 2,407 ft; drlg. granite wash, 2,545-53 ft. with small increase; shot with 400 qts., 2,695-2,780 ft. and 150 qts. at 2,560-2,620 ft; C.O; will shoot again; T.D., 2,960 ft.

Staggers Oil Co.'s (was Ruby Oil Co.'s) No. 1 B. F. Tally. Rigging up, 635 ft. (was temp. abd. early in April.)

Navillus Oil Co.'s (was Sullivan et al's) No. 1 fee, NW cor. E ½ SW, Sec. 1, Blk. 1, A. C. H. & B. Sur..... Drlg., 1,703 ft.
J. Williams et al's No. 1 C. W. Bradford, Sec. 123, Blk. B-2 ..... Rig; temp. abd.

HALE COUNTY

Donnell Pet. Co.'s No. 2 Mullican, NW cor. Sec. 66, Blk. A-3, I. & S. B. Sur. ..... Top pay in sandy shale, 405 ft; ⅛ bailer oil and 3 bailers water per day; S.D., 500 ft.

Donnell Pet. Co.'s No. 1 Mullican, C Sec. 21, Blk. B, R. M. Thompson Sur. ..... 200 ft. fluid in hole from 407-14 ft; S.D.

Exploration Co.'s No. 1 Crawford, cen. NE, Sec. 17, Blk. C-3, T. T. R. R. Sur. ..... Spud and S. D.
Exploration Co.'s No. 1 fee, C SE half Sec. 19, Blk. S-4, D. & S. E. Sur. ..... Rig; T.A.
Exploration Co.'s No. 1 Goodman ..... Spudded and S.D.
A. S. Mimm's No. 1 W. A. Ritcher, 700 ft. from east line and 1,200 ft. from south line, Sec. 17, Blk. X, John Glynn Sur. ..... Drlg., 500 ft.

HALL COUNTY

Seifert et al's No. 1 Owens, C NE Sec. 179, Blk. S-5, Dennison & Pacific Sur. ..... Spudded and S.D.

HANSFORD COUNTY

Oklavania et al's No. 1 Coots, Sec. 13, Blk. 45, H. & T. C. Sur. ..... S.D., 560 ft.

HOCKLEY COUNTY

World Oil Co.'s No. 1 Ellwood ..... S.D., 400 ft.

HARTLEY COUNTY

Deep Rock Oil Co.'s No. 1 Lymann & Balfour, Sec. 9 Blk. 2 ..... Show gas and rainbow of oil, 2,-560 ft; top lime, 2,810 ft; 24,-000,000 ft. gas, 3,100-3,280 ft; show oil, 3,648-50 ft; 3,653-75 ft. 150 ft. salt water; set 6-in. 3,642 ft; drlg., 3,950 ft.

Eslick et al's No. 1 J. R. Irving, Sec. 13, Blk. 13..... Topped granite wash, 3,108 ft; show oil, 3,226 ft; drlg., 3,750 ft.

J. E. McKanna's No. 1 Frances Farwell, Sec. 30, Blk. 22.. T.D., 3,280 ft; rerun 6-in; S.D.
J. E. McKanna's No. 1 J. M. Shelton est., Sec. 29, Blk. 202 ..... S.D., 3,585 ft.

HEMPHILL COUNTY

Hoover et al's No. 1 Schaller est., Sec. 4 ..... Spudded and S.D.
Hoover et al's No. 1 fee, J. S. Hood Sur. ..... Run. 5-in. cas. to 4,555 ft; drlg., 4,760 ft.

HUTCHINSON COUNTY

Anderson & Pritchard's No. 2 William Yake, SW cor. NW, Sec. 1, Blk. J, H. & G. N. Survey, half mile W of No .1 ..... Topped lime, 2,025 ft; set 8-in. at 2,030 ft; show gas, 2,495 ft; 10 bbls. oil and 50 bbls. water, 2,778-2,825 ft; salt water, 2,815-25 ft; C.O., 2,850 ft.

R. G. Barnum et al's No. 1 Garland Sanford, Sec. 78, Blk. 46 ..... Rig.
Beam et al's No. 1 Cockrell, Sec. 3, Blk. 23 ..... S.D., 405 ft. for orders.
Big Coach Oil Co.'s No. 1 Dunnaway, Sec. 5, Blk. Y..... S.D., 750 ft.
Conklin et al's No. 1 Johnson, Sec. 1, Blk. X-2, H. & O. B. Sur. ..... S. D., 600 ft. for 12-in.
Great Plains Oil Co.'s No. 1 Bivins, Sec. 13, Blk. Y-2, T. T. R. R. Sur. ..... 60,000,000 ft. gas, 2,540-60 ft; fish., 3,190 ft.
Golden Eagle Oil Corp.'s No. 1 J. Q. Bost, Sec. 6, Blk. Y-2 ..... Spudded and S.D.
McMan O. & G. Co.'s No. 1 Albert Yake ..... Set. 8-in., 1,900 ft.
Panfield Oil Co.'s No. 1 Luginbyhl Bros., Sec. 50, Blk M-23 ..... S.D., 1,200 ft.
Phillips Pet. Co.'s No. 12 Elva-Whittenburg, E. Tomlinson Sur ..... Set 5-in., 4,323 ft; S.D. for orders, 4,445 ft.
Prairie O. & G. Co. and Vacuum Oil Co.'s No. 1 Cal Merchant ..... Drowning out 75,000,000 ft. gas, 2,252-2,740 ft; fish., 2,550 ft.
Skyrocket Oil Co.'s No. 1 Mrs. R. A. Jameson..... S.D., 2,519 ft.
Sweeney et al's No. 1 Johnson, Sec. 38, Blk. Y..... Shut down, 1,720 ft.
The Texas Company's No. 1 Ellis Cockrell, Sec. 1, Blk. Y ..... Drlg., 3,560 ft.
Vitek Oil Co.'s No. 1 W. F. Allen, Jose Rodrigues Sur.... S.D., 180 ft.

KING COUNTY

California Co.'s No. 1 Spikes Farm No. 2 ..... Show of gas, 1,980-90 ft; 6 bailers salt water per hr., 2,085-90 ft; drlg., 3,345 ft.

Humble O. & R. Co.'s No. 1 Pitchfork, Sec. 171, Blk. A-96, John H. Gibson Sur. ..... Drlg., 470 ft.
Midwests' No. 1 Patton ..... Drlg. by cas., 3,004 ft.
J. L. Pattison's No. 1 Patton ..... Slight show gas, 2,115-30 ft; S.D., 2,673 ft.
White Eagle's No. 1 Burnett estate..... S.D. for 5-in., 3,440 ft.

LAMB COUNTY

Tolbert & Simms' No. 1 Elwood, NE SW SW, Sec. 14, Blk. B., R. M. Thompson Sur. ..... Rigging up.

LIPSCOMB COUNTY

Cal-Tex's No. 1 Bradford, C NE NE Sec. 899, Blk. 43, H. & T. C. Sur. ..... Spudded and S.D.
Camp Creek Oil Co.'s No. 1 Mrs. H. D. May, Sec. 613, Blk. 43 ..... Drlg., 900 ft.
McCorkle's No. 1 A. Barton, NE cor. SW SE Sec. 504, Blk. 43, H. & T. C. Sur. ..... Water in lime at 4,126-40 ft; 6-in. set, 4,155 ft; S.D., 4,200 ft.
Ozark Drlg. Co.'s No. 1 Frass, NE SE Sec. 106, Blk. 10, H. & T. C. Sur. ..... Rig on ground.
Smith, Kinsley & Ruby's No. 1 C. W. Jones, NE cor. SW, Sec. 100, Blk. 43 ..... Show oil, 3,520 ft; salt water at 3,900 ft; S.D.

LUBBOCK COUNTY

Center Oil Co.'s No. 1 Bowles ranch..... Small show oil, 1,133-40 ft. in sand; drlg., 1,160 ft.

MOORE COUNTY

A. O. Duggan's (was Shadler Bros.') No. 1 John Lowery, Sec. 237, Blk. 44 ..... Topped lime, 2,680 ft; set 8-in. at 2,770 ft; 4,000,000 ft. of gas, 2,-930-3,020 ft; 15,000,000 ft. gas, 3,100-50 ft; (actual gauge); S.D., 3,504 ft.
Prairie and Shamrock's No. 2 Gober, Sec. 16, Blk. M-21. Drlg., 1,460 ft.

MOTLEY COUNTY

Exploration Co.'s No. 1 Burleson ..... Spudded and S.D.
Exploration Co.'s No. 1 Tillson ..... S. D., 760 ft. for repairs.
Exploration Co.'s No. 1 Matador Land & Cattle Co., cen. SW, Sec. 37, John Gibson Sur. ..... Spudded and S.D.
Wheeler et al's No. 1 C. D. Bird, C NE Sec. 4, Blk. S, Stephens Sur. ..... Spudded and S.D.

OCHILTREE COUNTY

W. G. Burton's No. 1 Stickler, Sec. 679, Blk. 43..... Fish. 3 joints pipe, 3,940 ft.
Hamilton et al's No. 1 R. E. Wamble, Sec. 144, Blk. 43.. S.D., 250 ft.
McCorkle Pipe Line Co.'s No. 1 R. H. Moore, Sec. 471, Blk. 43 ..... S.D., 1,600 ft.
McCorkle's No. 1 Welnett, Sec. 674, Blk. 43 ..... S.D., 850 ft.
Standard Dec. Co.'s No. 1 Bowden, Sec. 923, Blk. 43..... S.D., 900 ft.

OLDHAM COUNTY

Prairie O & G. Co.'s No. 1 Landegrin, SE cor. NE SW Sec. 46, League 310, Capital land ..... 1,900 ft. water, 4,085-93 ft; T.D., 4,518 ft; very small show oil; cmt. 6-in.

PARMER COUNTY

Humble O. & G. Co.'s No. 1 Farwell; elev. 4,005 ft..... Temp. abd., 3,600 ft.

POTTER COUNTY

Amarillo Oil Co.'s No. 1-B Masterson, Sec. 43, Blk. G-M-3, G. & M. Sur. ..... Drlg., 1,380 ft.

ROBERTS COUNTY

Big Bend Oil Co.'s No. 1 Mrs. H. Ledrick & Sons, Sec. 7, Blk. 5-A ..... Show gas, 4,990 ft; show oil, 4,-992 ft; cas. set at 4,992 ft; S.D., 5,035 ft.
Murphy et al's No. 1 Gill, Sec. 31, Blk. M-2 ..... S.D., 650 ft.
Roco Oil Co., formerly Charles Page et al's No. 1 W. T. Hammon, Clay County school lands ..... Spud. and S.D.
C. C. Wilson, No. 1 A. H. Tandy, NE cor. Sec. 182, Blk. 42, H. & T. C. Sur. ..... Spud. and S.D.

SHERMAN COUNTY

Gibson Oil Co.'s No. 1 Bivins, Sec. 35, Blk. 2-B..... Show gas, 2,015-25 ft; S.D., 2,140 ft.
Hagy & Harrington's No. 1 S. F. Flores, C SW Sec. 64, Blk. 3-T, T. & N. O. Sur. ..... Drlg., 2,900 ft; 8-in. at 2,726 ft.
Phillips Pet. Co. and Prairie O. & G. Co.'s No. 1 Price & Fuqua, C NE, Sec. 33, Blk. 2-B, G. H. & H. Sur.. 8-in., 2,726 ft; 500,000 ft. gas, 3,-048-50 ft; drlg., 3,070 ft. Show gas, 2,105 ft; drlg., 2,322 ft.

SWISHER COUNTY

Explth. Co.'s No. 1 W. C. Denwiddie ,Sec. 70, Blk. M-11, A. B. & M. Sur.; elev. 3,610 ft. ..... Rig on ground.

WHEELER COUNTY

Angus et al's No. 1 Vermillion, SW cor. NW SW, Sec. 80, Blk. 17, H. & G. N. Sur. ..... T.D., 2,139; S.D. in granite; 10,-000,000 ft. gas, 2,040-45 ft.
E. L. Arnold's No. 1 M. J. Williams..... Drlg., 1,400 ft.
Foster et al's No. 1 S. H. McDonald, SE cor. NW SW, J. N. Lindsay Sur. ..... Spudded and S.D.
Hatcher et al No. 1 J. Hatcher, cen. NE SW Sec. 80, Blk. 23, H. & G. N. Sur. ..... Drlg., 800 ft.
Lyons et al's No. 1 Jackson, Sec. 11, Blk. 27, H. & G. N. Sur. ..... 1,100 ft. oil; granite wash, 2,290-2,300 ft; S.D. for storage; swabbed 100 bbls.
Marland Oil Co.'s No. 2 W. E. Bentley ..... S.D. by agreement, 2,277 ft.
Piney Oil & Gas Co.'s No. 1 M. E. Ackley, C NW NW Sec. 20, Blk. 24, H. & G. N. Sur. ..... Drlg., 1,425 ft.
Piney Oil & Gas Co.'s No. 1 W. S. Walker, Sec. 44, Blk. 24, H. & G. N. Sur. ..... T.D., 2,280 ft; show gas; dropped 8-in. 25 ft; fishing.
Smith Brady et al's No. 1 P. J. Sorenson, Sec. 53, Blk. A-4 ..... S.D., 2,112 ft. for orders.
The Texas Company's No. 1 Bell, Sec. 71, Blk. 13, H. & G. N. Sur. ..... Gas 3,005 ft; swabbed 40 bbls. in 8 hrs. from granite wash, 2,-145-55 ft; 1,000 ft. oil; T.D., 2,-740 ft; will plug back.
The Texas Company's No. 1 Morgan, Sec. 93, Blk. 17.... Drlg., 900 ft.
H. H. Vaughn's No. 1 Cuddeback..... Show gas, 1,850 ft; drlg., 1,854 ft.

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KANSAS FIELDS

(Continued from Page 34)

31-2e. Roxana Petroleum Corp.'s rig is up for No. 2 Emerich, Tract 5, Section 14-32-2e, Oxford Townsite Pool. Location was made for No. 2 Emerich, Out Lot 22, Section 14-32-2e. The rig is up for No. 2 Nevitt, Tract 3, Section 14-32-2e. Location has been made for No. 1 Van Winkle, Out Lot 28, Section 14-32-2e.

Roxana Petroleum Corp. and others' No. 1 Oxford Townsite, Lot 9, Block 34, Section 11-32-2e, was completed for 50 bbls. in sand at 2,080-2,169 feet. La Rob Oil Co.'s No. 1 Buffington, Midland Railroad, Section 14-32-2e, came in for 1,000 bbls. in sand at 1,993-2,100 feet. Sharp and others' No. 1 Oxford Townsite, Lot 16, Block 40, Section 14-32-2e, made 30 bbls. from sand at 2,105-58 feet.

Rooks County

Livingston and others' No. 1 Lukman, SW cor. SE Section 11-9-16w, is a 50-bbl. well in sand at 3,228-51 feet.

McPherson County

The Prairie Oil & Gas Co.'s No. 1 Wedell, SW cor. NW Section 6-21-2, is dry at 3,466 feet.

Wabaunsee County

Braden, McClure and others' No. 1 Blank, C SE SE Section 9-12-10, is spudding.

OKLAHOMA FIELDS

(Continued from Page 36)

35-5-8. The Texas Company's No. 1 Glover, NE cor. NW NW, Section 13-4-8w, is rigging up rotary tools. Twin State Oil Co. is rigging up the rotary tools for No. 2 Pettit, NE cor., Section 14-4-8w. Amerada Petroleum Corp. & W. H. Gant's No. 7 Hicks, SE cor. NE NE, Section 21-3-5w, is drilling at 1,225 feet.

Meridan Gas Co.'s No. 2 Woods, NW cor. NE NW, Section 2-4-8w, is shut in for 35,000,000 feet of gas at total depth of 2,148 feet. Sinclair Oil & Gas Co.'s No. 2 Williams, NW cor. SE SW, Section 11-4-8w, is making 10,000,000 feet of gas from sand 2,250-2,420 feet. Carter Oil Co.'s No. 1 T. Horton, NE cor. NW SW, Section 8-3-5w. was completed for 22 bbls. from sand 2,040-67 feet. Marland Oil Co. & Ray's No. 2 Woods, NW cor. SE NE, Section 17-3-5w, has been abandoned at 2,375 feet. Carter Oil Co.'s No. 2 Wall, SW cor. NW NE, Section 21-3-5w, is pumping 52 bbls. from sand 1,895-1,906 feet. No. 2 Miller, SW cor. Section 22-3-5w, drilled to 1,890 feet and plugged back to 1,840 feet where it is making 15 bbls. Magnolia Petroleum Corp.'s No. 1 Graham, NW cor. SE NW, Section 25-3-5w, is dry at 4,115 feet.

Grant County

Western States Oil Co. made location for No. 2 Howell, SE cor. SW SW, Section 14-17-3w.

Haskell County

San Bois Gas Co.'s No. 1 Powell, NE cor., Section 24-8-20, was completed for 500,000 feet of gas in sand 835-80 feet.

Kay County

Anderson & Peterson are rigging up machine for No. 1 Myer, SW cor. SE SW, Section 31-27-2. Comar Oil Co. is rigging up to deepen No. 1 Garret, NE cor. NW SE, Section 31-27-2, below the depth of 2,238 feet.

Comar Oil Co.'s No. 1 Judd, NE cor., Section 29-29-1w, is dry and abandoned at 3,517 feet. Harris & Hahn's No. 2-A Swinson, SW cor. SE NE, Section 17-29-1, has been shut in for 1,400,000 feet of gas from sand 754-56 feet. O'Kansas Oil Co.'s No. 1 Chambers, NW cor. SW, Section 29-27-1w, is a dry hole at 3,970 feet. Larutan Fuel Co.'s No. 2-A Woods, NW cor. NE NW, Section 30-27-1w, is making 554,400 feet of gas from sand 733-43 feet. Mid Co Oil Co.'s No. 1 Poole, NE cor. NW, Section 31-25-1w, has been abandoned at 1,600 feet.

Lincoln County

Texas Pacific Coal & Oil Co.'s No. 1 Dahlke location has been made NW cor., Section 5-16-5. Magnolia Petroleum Corp. has the rig on the ground for No. 1 Jacobs, SE cor, Section 10-15-5.

Carter Oil Co.'s No. 1 West, SW cor. SE SE, Section 30-17-5, is dry and abandoned at 4,344 feet. H. F. Wilcox Oil & Gas Co.'s No. 1 Bledsoe, NE cor., Section 10-13-6, is dry and abandoned at 4,376 feet.

Logan County

Ramsey Brothers have the rig on the ground for No. 1 Smith, NE cor. SW, Section 33-18-4w. The Prairie Oil & Gas Co. is building the rig for No. 1 Moore, SE cor. NE NE, Section 33-18-4w. Carter Oil Co.'s No. 1 Rogers, SW cor. NE SW, Section 32-19-3w, is dry and abandoned at 6,218 feet.

McIntosh County

J. E. Weible's No. 1 S. Bruner, SW cor. SE NW, Section 36-11-16, is rigging up.

Muskogee County

P. H. Stein's No. 4 Davidson, SE cor. NW SW, Section 24-15-17, is a dry hole at 1,468 feet.

Noble County

National Oil Co. made location for No. 1 Bellman, NW cor. NE, Section 32-24-1w.

Osage County

Osage Gas Producers Co. has the machine at the location for No. 381, SW cor. NW SW, Section 5-27-11. Kewanee Oil & Gas Co. made location for No. 9, SE cor. NE NW, Section 34-27-6. H. H. Mundy is rigging up a machine for No. 1, SW cor. SE, Section 36-22-8.

Osage Gas Producers Co.'s No. 380, CSL NE SE, Section 6-27-11, was completed for 2,750,000 feet of gas in sand 1,869-76 feet. Indian Territory Illuminating Oil Co.'s No. 377, NE cor., Section 17-27-11, has been shut in for 1,250,000 feet of gas in sand 721-63 feet. George Parker's No. 980, NE cor. NW NW, Section 11-26-6, has been completed for 1,105 bbls. from the Burbank sand 2,807-55 feet. Peters Petroleum Co.'s No. 2, NW cor. SW, Section 26-25-9, made 150 bbls. natural from the Bartlesville sand 2,115-31 feet. Oklahoma Natural Gas Corp.'s No. 774, SE cor. NW SE, Section 33-22-11, tested 4,500,000 feet of gas from the Bartlesville sand 1,580-85 feet.

Payne County

Marland Oil Co. and others' No. 1 Lemons, C SE NW, Section 10-19-1w, is dry and abandoned at 5,105 feet. Wood Oil Co.'s No. 1 Curley Chief, SW cor. SE, Section 33-19-5, was completed for 10,000,000 feet of gas in sand 2,119-34 feet.

Pontotoc County

Louisiana Oil Refining Co. has the rig up for No. 4 Harjo, SE cor. NE SW, Section 17-5-8. Homaokla Oil Co. has moved the rig material out for No. 4 Milner, NW cor. SE SE, Section 17-5-8. Texas Pacific Coal & Oil Co. has built the rig for No. 1 Hutcheon, NE cor. SE SE, Section 19-5-8.

Pottawatomie County

Magnolia Petroleum Corp.'s No. 2 Billington, NE cor. SE NE, Section 11-7-4, Pearson area, is rigging up rotary tools. Pierce Oil Corp. made location for No. 1 Sanders, NW cor. SW, Section 20-7-4.

Magnolia Petroleum Corp.'s No. 2 Cowden, NW cor. SW, Section 4-9-5, Earlsboro Pool, made 607 bbls. on the swab from the Wilcox sand 4,331-34 feet. Independent Oil & Gas Co. & Darby Petroleum Co.'s No. 4 Knapp, NE cor. SE NE, Section 8-9-5, was completed for 570 bbls. on the swab, producing from the Wilcox sand 4,328-44 feet. Mid-Continent Petroleum Corp.'s No. 6 McKinley, SE cor. NW SW, Section 9-9-5, mode 190 bbls. from the Wilcox sand 4,406-11 feet. Gypsy Oil Co.'s No. 5 School Land, SE cor. SW NE, Section 16-9-5, is a dry hole at 4,369 feet. Mid-Kansas Oil Co.'s No. 1 Brandenburg, NE cor. SW SW, Section 34-8-4, has been abandoned at 3,960 feet after plugging back from 4,358 feet. Pierce Oil Corp.'s No. 1 Saunders, NE cor. SE NE, Section 25-7-3, has been completed for 467 bbls. in the Hunton lime 3,889-98 feet. Magnolia Petroleum Corp.'s No. 1 School Land, SW cor. NE, Section 36-7-3, is pumping 10 bbls. from sand 3,790-3,800 feet. Amerada Petroleum Corp.'s No. 1 Lawson, SE cor. NW, Section 2-7-5, is dry at 4,780 feet.

Seminole County

Continental Oil Co. & Darby Petroleum Co.'s location was made for No. 3 Bruner, NW cor. SW SW, Section

2-9-5, Earlsboro Pool. Gypsy Oil Co. has the cellar dug for No. 11 B. Carter, NE cor. NW NW, Section 11-9-5. Indian Territory Illuminating Oil Co. has dug the cellar for No. 2 Work, SW cor. NW SW, Section 24-8-6. The Texas Company has the rig up for No. 3 Coker, SE cor. NE SW, Section 1-7-6, Little River Pool.

Sinclair Oil & Gas Co.'s No. 2 D. Hill, NE cor., Section 9-10-8, an old well deepened, is dry and abandoned at 4,219 feet. Pure Oil Co.'s No. 3 Aldridge, SW cor. SE NW, Section 3-9-6, Searight Pool, was completed for 480 bbls. from the Wilcox sand 4,467-75 feet. No. 5 Aldridge, SE cor. NW, Section 3-9-6, had an initial production of 1,295 bbls. from the Wilcox sand 4,706-10 feet. Carter Oil Co.'s No. 21 M. Killing, NW cor., Section 23-9-6, Seminole Pool, made 280 bbls. on the swab, producing from the Wilcox sand 4,214-68 feet. No. 4 Strother, SW cor. NE NE, Section 34-9-6, had an initial production of 40 bbls. from the Wilcox sand 4,111-26 feet, plugged back from 4,175 feet. Sinclair Oil & Gas Co.'s No. 3 Cudjo "B", SW cor. NW NW, Section 35-9-6, had Wilcox sand 4,018 feet to 4,126 feet and swabbed 890 bbls. Barnsdall Oil Co.'s No. 4 Peters, NW cor. SE SW, Section 10-9-5, Earlsboro Pool, pumped 30 bbls. from the Wilcox sand 4,340-48 feet. Gypsy Oil Co.'s No. 3 Bruner, NE cor. NW NE, Section 10-9-5, flowed 2,527 bbls. from the Wilcox sand 4,240-68 feet. Independent Oil & Gas Co.'s No. 4 Bruner, NW cor. SW NE, Section 10-9-5, made 1,430 bbls. from the Wilcox sand 4,428-34 feet. No. 1 Sullivan, NE cor. SE NE, Section 10-9-5, was completed for 4,724 bbls. from the Wilcox sand 4,350-51 feet. Magnolia Petroleum Corp.'s No. 1 Simpson, NE cor. NW SE, Section 10-9-5, pumped 63 bbls. from the Wilcox sand topped at 4,342 feet, drilled to 4,353 feet and plugged back to 4,351 feet. No. 3 Simpson, NE cor. SW SE, Section 10-9-5, had the Wilcox sand at 4,356 feet drilled to 4,358 feet and plugged back to 3,575 feet and swabbed 16 bbls. No. 2 Lena, NW cor. SW SE, Section 10-9-5, was completed for 100 bbls. at 3,567 feet. The Texas Company's No. 2 Brown, SW cor. NW, Section 10-9-5, made an initial of 3,180 bbls. from the Wilcox sand 4,358-66 feet. Gypsy Oil Co.'s No. 3 Noble, NW cor. SW NE, Section 12-9-5, was completed for 3,302 bbls. from the Wilcox sand 4,246-65 feet. Skelly Oil Co.'s No. 2 Spencer, NE cor. SW NW, Section 12-9-5, had Wilcox sand 4,360-84 feet and made 1,633 bbls. Sinclair Oil & Gas Co.'s No. 2 Hollins, SE cor. NE NW, Section 12-9-5, came in for 1,905 bbls. in the Wilcox sand 4,346-61 feet. Gypsy Oil Co.'s No. 4 Cumsey, NW cor. NE SE, Section 10-8-6, Bowlegs Pool, was completed for 220 bbls. from the Wilcox sand 4,050-4,294 feet and plugged back to 4,120 feet. No. 4 Ellen, NW cor. SW, Section 11-8-6, had Wilcox sand 4,030-70 feet and made 2,339 bbls. Tidal Oil Co.'s No. 1 Grayson, SW cor. NE NW, Section 13-8-6, made 1,435 bbls. from the Wilcox sand 4,188-4,208 feet. Pure Oil Co.'s No. 20 Reed, NW cor. NE SE, Section 14-8-6, had an initial production of 534 bbls. from the Wilcox sand 4,331-43 feet. Shaffer Oil & Refining Co.'s No. 1 Lacey, NW cor. SE SW, Section 14-8-6, is dry and abandoned at 4,889 feet. Gypsy Oil Co.'s No. 3 Walker, NW cor. SE, Section 15-8-6, made 526 bbls. from the Wilcox sand 4,281-4,393 feet. Mid-Continent Petroleum Corp.'s No. 1 Wadsworth, SW cor., Section 36-8-6, made 800 bbls. after plugging back to 4,239 feet from 4,241 feet. Magnolia Petroleum Corp.'s No. 1 Grisso, SE cor. NE, Section 9-8-8, is dry and abandoned at 4,460 feet. The Prairie Oil & Gas Co.'s No. 9 Stidham "A", NE cor. NW NE, Section 11-9-5, came in for 3,815 bbls. natural from the Wilcox sand 4,282-4,306 feet. No. 3 C. Graham, SE cor. SW SE, Section 3-9-5, made 2,185 bbls. from the Wilcox sand 4,288-4,308 feet. No. 6 Harber, NW cor. SE SW, Section 10-8-6, was completed for 60 bbls. from the Wilcox sand 4,186-4,216 feet.

Stephens County

Clarkson & Smith have the rig up for No. 2 Blaydes, NE cor. SE SW SE, Section 29-1s-8w. Magnolia Petroleum Corp. has moved the rig material out for No. 1 Bell, NE cor. SE SW, Section 13-1s-4w. Wirt Franklin's No. 6 Apple-Franklin, SW cor. NE NE, Section 24-1s-4w, was completed for 35 bbls. in sands 2,772 feet to 2,834 feet.

Wagoner County

J. E. Martin and others have a machine on the ground for No. 1 Burgess, NE cor. SE SE, Section 34-18-16. A. A. Williams' No. 4 McIntosh, NE cor. SW NE NE, Section 12-18-17, is drilling at 210 feet.

A. A. Williams' No. 3 McIntosh, CNL SE NE, Section 12-18-17, is dry at 320 feet. Webb & Allison's No. 1 Brown, SW cor., Section 8-18-18, is a dry hole at 400 feet. W. O. Dickenson's No. 1 Apucka, CEL SE NW, Section 6-17-15, has been abandoned at 1,394 feet. R. H. Perry's No. 3 M. Cousins, SE cor. NW NE, Section 7-17-16, is dry and abandoned at 1,550 feet. H. W. Lampton's No. 1 Rulison, NW cor. SW SE, Section 9-15-16, is a dry hole at 1,137 feet.

MEXICAN EXPORTS OFF; PRODUCTION DROPPING

Exports of crude oil and distillates from Mexico in August, totaling 4,384,733 bbls., decreased 769,189 bbls. from July, a new low record. Pan American Petroleum, which recently has accounted for half of all shipments, exported but 1,752,292 bbls., against 2,899,938 bbls. in July and although it imported nearly 35,000 bbls. daily from Venezuela in July for the Tampico refinery, it brought in but 378,503 bbls., or 32,200 bbls. daily, in August. In addition to its exports, which were shipped primarily to the United States, it delivered 268,845 bbls. of crude oil, 188,772 bbls. of fuel oil, 1,990,328 liters of gasoline, 398,070 liters of crude kerosene and 146,330 liters of finished kerosene in Mexico.

Mexican Eagle exports fell off 158,322 bbls. and of its loadings 172,000 bbls. were asphalt. There were but eight exporting companies in August against 12 a year ago. Exports by companies in August, with increases or decreases from July and totals in August, 1926, follow (in barrels):

Company—	August	Decrease	August 1926
Pan American	1,752,292	1,147,646	2,048,233
Standard of N. J.	742,177	*38,160	1,301,607
Royal Dutch	274,552	30,611	380,981
Sinclair	595,072	*345,374	584,194
Mexican Eagle	683,288	158,322	1,112,453
Mexican Atlas	.....	129,911	33,450
Freeport Sulphur	23,953	368	.....
The Texas Co.	249,221	*249,221	153,290
Miscellaneous	64,178	*64,178	631,727
Total	4,384,733	769,189	6,245,935

*Increase.

This year will show the lowest Mexican oil production since 1917, when it was around 55,000,000 bbls. and gradually increased to the peak of 194,000,000 bbls. in 1921. Estimates are the 1927 total will be less than 60,000,000 bbls. The sharp decline has been between 1925 and 1927, production this year being approximately 60 per cent of the former because of the conditions brought about by the petroleum laws enacted in December, 1925.

There are now only 40 rigs running in the Panuco district against 285 a year ago. Mexico, formerly second in the world's petroleum production, is now fourth.

PENNSYLVANIA MARKETS

OIL CITY, Pa., Sept. 24.—Leading features of the refined market in Pennsylvania during the past week were the better demand and higher prices for gasoline and kerosene, both of these products showing unusual strength. Despite cooler weather the movement of gasoline from the refineries has been very good. Kerosene has shown real strength as the result of a big demand for the product for use in fall harvesting and plowing and prices for various grades of water white are higher. The demand for neutrals continues to be very strong and they are holding their own as far as price is concerned. Wax has been moving fairly well. There is a good demand for fuel oil. Bright stocks are in fair demand. The condition of the cylinder stock market seems to be better and price is improving a little in this district.

HERE'S A NEW SLANT on the crooked hole evil!

The PREVENTION of crooked hole, rather than the correction of this evil is the new purpose in drilling; made possible by the Nebergall Spiral Stem whose advantages have made it the most practical and economical stem in drilling history.

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5. Reduces Whipping
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8. Protects Casing Shoe
9. Protects Casing From Line Cutting
10. Perfects Under-Reaming
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INTERNATIONAL PETROLEUM CONGRESS IS OPENED BY PRESIDENT W. G. SKELLY

W. G. Skelly, president of the International Petroleum Exposition and Congress, opened the big show when he called the Petroleum Congress together in the Crystal Ball Room of the Mayo Hotel in Tulsa Saturday morning, September 24.

The congress program was brief. President Skelly introduced Manual Zevada, a delegate from the Mexican Government and a conservationist of note in that country, and Alexander Reiger, of the Czechslovakian legation at Washington, who was sent to the exposition by his government in behalf of the oil industry of that country.

F. J. Hinderliter, Hinderliter Tool Co.; Harry H. Smith, secretary of the Mid-Continent Oil & Gas Association and A. W. Leonard, oil producer, were appointed as a committee on committees and Nelson K. Moody, president of the Prairie Oil & Gas Co.; E. W. Clark, president of the American Petroleum Institute and executive vice president of the Union Oil Co. of California, and R. A. Griffith, president of the Sinclair Oil & Gas Co., as a committee on resolutions.

President Skelly's Address

President Skelly in his addess of welcome spoke as follows:

"We are assembled here today as the fourth International Petroleum Congress, which is held in conjunction with the International Petroleum Exposition. During the two years since we last met a great many things have happened in the oil industry which have caused much study and anxiety on the part of people interested in the oil business. There has been a greater improvement during the past two years in the methods of all branches of the industry than there has been during any previous five-year period since oil was first discovered by Colonel Drake in 1859.

"Even up to two years ago any mechanical, electrical or chemical device that was used in the location of oil was called a 'doodlebug' and was frowned upon by geologists and all practical producers. Experience has taught us that there are possibilities in the seismograph, the torsion balance, the magnetometer and other devices used in the location of petroleum deposits which lie many hundred of feet below the surface of the earth, as many geologists and engineers are now working with them and some large and successful oil companies have spent large sums of money in going over many thousands of square miles of land with these instruments before leasing them for oil.

New Production Methods

"New methods have also been developed in the production of oil. Air has been applied to the wells in two diametrically, if I may use the word diametrically, opposite methods. One method used successfully, first in California, then in Seminole and now in Southwest Texas on flush wells, has been to insert tubing inside of casing down to within a few hundred feet of the oil sand through which air or gas is forced. The air rising rapidly between the tubing and casing, carries the fluid with it thus acting as a lift in bringing the oil to the surface, relieving the pressure of the weight of the fluid on the sand. Another method has been to force air, gas and water through certain holes in an old developed oil field into the sand, which pushes the oil ahead of it to other wells. Chemicals are also put into the water thus used which clean the sand of oil, like washing powder cleans cloth of grease.

"Pumping methods have been improved. The engines that drive the pumps have been improved, all to the benefit of the producer.

Advances in Gasoline Technique

"There has also been a great improvement in the method of handling casinghead gas from which a surprisingly great amount of gasoline is extracted, both through the compression system and the absorption system. In a great number of old properties the value to the producer of the casinghead gas is even greater than the oil production. These things I have just mentioned have been not only beneficial to the producer but to the royalty owner as well and today we find a great number of the producing companies actively buying oil royalties.

"There has been a great movement in standardization in all departments of the mechanical equipment used not only in drilling and producing but refining and transporting as well, and in conjunction with refining I might say that we are now getting, with our latest methods, many gallons of gasoline out of a barrel of certain gravity crude where a few years ago we got only a few gallons. A great improvement has also been made in the transportation of oil and its products, both through pipe lines, tank cars and tank wagons. The insulated tank or wagon was unknown a few years ago. This alone has prevented much evaporation and has turned many a business transaction which, under the old methods, would have been a loss, into a profit. The rapidity with which gasoline products now move has eliminated the necessity, in many instances, of big storage facilities as today you find long trains carrying petroleum and its byproducts through the country with the speed of express trains.

Better Service at Less Cost

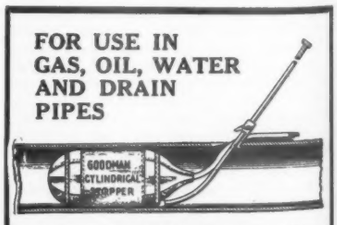
"These things have caused the industry a great deal of thought and have all contributed to an economical saving of petroleum, which we might say is an inheritance to the population of the world. Petroleum must be considered a basic element because our most noted scientists tell us that today we do not know the origin of oil, neither do we know from what it is made but are learning more uses for it daily. I think you gentlemen will all agree with me that although it is the third greatest industry in the world today, it is in competent hands and that the people, even though they have been, in many instances, deceived by promoters and fakes, feel that the true oil man is giving the world the best he has in thought, money and action and while there are some who cry that there is only a sufficient number of barrels of oil within the earth to last a few years, it is our belief that if the public will co-operate with the real oil man, there should be no fear of the supply of oil giving out before something has been discovered that will take the place of it.

"In behalf of the members of the International Petroleum Congress, gentlemen, I welcome you. There are going to be a great many meetings of experts in the different lines of the industry within the next few days and we want each of you to attend those in which you are interested. You will not only help cement the ties of petroleum fellowship more closely but you will get a great deal of good from them and you will help us all to attain the end which we, in the business, are striving for and that is, better service at less cost. I thank you."

EUROPE BUYING MORE CARS

NEW YORK, Sept. 24.—"The automotive industry is most active on the Continent today," says William O'Neil, president of the General Tire & Rubber Co., recently returned from Europe. "The adoption of the American system of selling cars on a credit basis has stimulated the European automobile market."

FOR USE IN GAS, OIL, WATER AND DRAIN PIPES



Safety Gas Main Stopper Co.
523 Atlantic Ave.,
Brooklyn, N. Y.

CALIFORNIA FIELD OPERATIONS FOR THE MONTH OF AUGUST, 1927

According to figures collected by the American Petroleum Institute, Pacific Coast office, the total production of crude oil in California for August amounted to 19,279,131 bbls., an average of 621,907 bbls. per day. This is a decrease of 1,287 bbls. per day under July production.

Total stocks of crude and all products in Pacific Coast territory decreased during the month 2,908,267 bbls. The total stocks at the end of the month were 141,851,238 bbls. The total stock decrease for 1927, up to August 31, was 3,760,938 bbls.

Seventy-five wells were completed during the month with an initial daily production of 42,286 bbls., compared with 70 wells completed during July with an initial production of 31,480 bbls.

PRODUCTION

(Figures of production and stocks are in barrels of 42 gallons.)

District—	Barrels Per Mo.	Daily Average Aug., '27	Daily Average July, '27	Daily Average Aug., '26
Kern River	526,823	16,994	16,176	11,503
Mount Poso	1,173	38	34	.....
Round Mountain	.....	.....	16	.....
McKittrick	156,930	5,062	5,001	5,231
Midway-Sunset	2,634,896	84,997	86,272	93,354
Elk Hills	772,349	24,914	25,809	34,814
Lost Hills-Belridge	121,771	3,928	3,696	4,612
Coalinga	596,101	19,229	19,646	19,446
Wheeler Ridge	31,821	1,026	1,009	1,077
Watsonville	1,783	58	57	58
Santa Maria	181,446	5,853	5,742	5,002
Summerland	4,203	136	136	129
Goleta	10,438	337	323	.....
Ventura Avenue	1,421,202	45,845	38,146	46,803
Ventura-Newhall	184,423	5,949	6,110	6,084
Los Angeles-Salt Lake	54,336	1,753	1,711	1,848
Whittier	51,028	1,646	1,724	2,003
Fullerton (Brea-Olinda)	568,913	18,352	17,854	18,762
Coyote	409,930	13,224	13,528	16,464
Santa Fe Springs	1,233,123	39,778	41,313	48,387
Montebello	437,664	14,118	14,454	18,058
Richfield	687,211	22,168	22,766	17,531
Huntington Beach	2,124,985	68,548	69,561	44,375
Long Beach	2,820,743	90,992	92,500	100,355
Torrance	683,401	22,045	22,789	28,072
Domingues	470,583	15,180	15,951	21,953
Rosecrans	263,590	8,503	8,776	13,599
Inglewood	1,041,797	33,606	34,303	44,727
Newport	635	20	26	47
Seal Beach	1,785,831	57,607	57,763	1,032
Total	19,279,131	621,907	623,194	605,325
July	19,319,021	623,194	.....	.....
Decrease	39,890	1,287	.....	.....

STOCKS

	Aug. 31, 1927	July 31, 1927	Aug. Stock Decreases	Aug. 31, 1926
Heavy crude, heavier than 20° A.P.I., including all grades of fuel	93,201,679	93,073,707	*127,972	88,452,937
Refinable crude, 20° A.P.I., and lighter	23,931,170	25,639,883	1,708,713	32,152,958
Gasoline	12,386,669	12,846,249	459,580	10,421,903
Naphtha distillates	3,104,755	3,413,614	308,859	4,755,297
All other stocks	9,226,965	9,786,052	559,087	10,471,989
Total all stocks	141,851,238	144,759,505	2,908,267	146,255,084

*Increase.

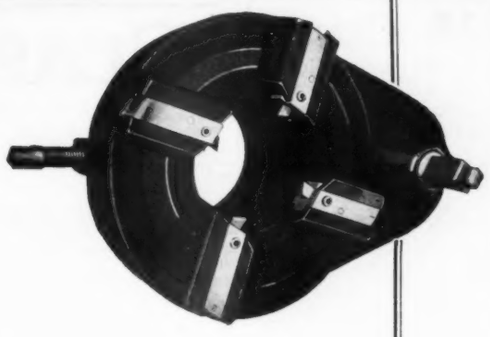
DEVELOPMENT

District—	New Rigs Up	Active Drilling	Completed	Daily Initial Output	Active Producing	Abd. Wells Drillers	Abd. Wells Producers
Kern River	16	18	10	2,110	1,300	...	...
Mount Poso	..	1	..	.....	.....	...	...
Round Mountain	2	3	...	.....	.....	...	...
McKittrick	2	1	...	.....	311	...	...
Midway-Sunset	1	3	4	171	2,877	2	2
Elk Hills	..	...	...	.....	231	...	...
Lost Hills-Belridge	..	2	...	.....	242	...	...
Coalinga	..	4	2	206	980	...	...
Wheeler Ridge	1	1	...	.....	29	...	...
Watsonville	..	...	...	.....	6	...	...
Santa Maria	..	4	...	.....	228	...	...
Summerland	..	2	...	.....	92	...	...
Goleta	1	5	...	.....	4	...	...
Ventura Avenue	1	19	6	11,660	88	...	...
Ventura-Newhall	1	24	...	.....	506	1	...
Los Angeles-Salt Lake	..	...	...	.....	339	...	...
Whittier	..	...	...	.....	183	...	...
Fullerton	2	6	2	1,208	382	...	...
Coyote	1	4	2	325	212	...	...
Santa Fe Springs	1	2	...	.....	326	...	1
Montebello	..	2	...	.....	185	...	...
Richfield	3	17	8	1,821	246	1	...
Huntington Beach	6	34	19	6,387	581	...	2
Long Beach	7	20	5	2,214	661	...	10
Torrance	..	1	1	68	658	...	...
Domingues	..	1	...	.....	76	...	...
Rosecrans	..	1	...	.....	115	...	5
Inglewood	4	1	1	295	222	...	...
Newport	..	2	...	.....	4	...	...
Seal Beach	5	27	15	15,821	118	...	1
Miscellaneous drilling	13	130	...	.....	.....	7	...
August	67	345	75	42,286	11,202	11	21
July	78	345	70	31,480	11,279	17	14
Increase	*11	...	5	10,806	*77	*8	7
Average year 1926	95	422	76	32,635	11,288	24	17
Average year 1925	105	417	79	42,247	11,393	28	12
Average year 1924	103	510	103	42,412	10,903	28	21
Average year 1923	111	759	82	114,690	8,928	24	
Average year 1922	115	605	67	43,700	9,410	17	

*Decrease.

OIL AND GAS FIELD MAP

The Department of the Interior announces the publication by the United States Geological Survey of new editions of its maps of the oil and gas fields of Oklahoma and Texas. The names and locations of the new pools from which the increased yield is being obtained and the location of many new wildcat wells are shown on the maps. Developments are so rapid, however, that even at the time of publication the maps are not strictly up to date. But the scale is sufficiently large so that those interested can record new developments. The maps are printed in colors. Oil fields are shown in green, gas fields in red and refineries, oil pipe lines and salt domes in purple; the base, showing county and land lines, streams, towns and railroads, is printed in a subdued tint so as to emphasize the oil and gas features. The scale is approximately 8 miles to an inch for Oklahoma and 12 miles for Texas, the size of the two maps being respectively 64 by 34 inches and 74 by 57 inches. These maps may be obtained from the United States Geological Survey, Washington, D. C., for the nominal price of 50 cents each.



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Now you can cut off 2" to 4" pipe easily, rapidly, and have a straight, square-end cut without inside burr, and with the outside edge neatly beveled, making it easy to start the threading dies on the pipe. The knives are fed automatically. A single hand-wheel sets them for cutting, or the quick return after the pipe is cut off. It is operated either with a ratchet handle, or a "TOLEDO" Power Drive. This new cutter operated by the standard "TOLEDO" Power Drive will cut off 2" pipe in 20 seconds, 4" pipe in 65 seconds. Very light and compact, simple to operate. Net price $60.00 f.o.b. Toledo.

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REFINERY EQUIPMENT AT BARGAIN PRICES

From Sinclair Refinery at Vinita, Okla., and Kansas Oil Refinery at Coffeyville, Kans.

28—fire stills

6—Steam stills

40—Condenser boxes

15—Agitators

7—Dismounted car tanks

105—Storage tanks from 50 to 55,000-bbl. capacity

50—Steam pumps

20—Triplex pumps

1—7-ft.x60-ft. Rotary dryer.

300—Tons structural steel

300,000 Fire brick

4,000,000 Building brick

1—Complete lubricating plant (except chillers), used only about 18 months, including.

1—20-ton Carbondale absorption refrigerating plant.

2—48-in. Carbondale filter presses.

2—Allbright-Nell filter presses

Complete sweat pan house equipment.

10—5ft.x15-ft. filter tanks

Necessary pumps and accessories

15—Miles pipe; 2-in. to 8-in.

18—Grimes oil line pumps

—4¾-inx18-in. Pattin Bros. oil line pumps.

Complete detailed catalog upon request.

Inspection invited.

MACHINERY & SUPPLY CORPORATION

Box 616 Joplin, Mo.

BARGAINS FOR SALE

1—New No. 26 Star drilling machine, with 30 H.P. mounted boiler and complete set of tools.

1—No. 32 Steel Keystone drilling machine with 30 H.P. mounted boiler and complete set of tools.

1—No. 23 Star drilling machine with 25 H.P. boiler and complete set of tools.

1—No. 5½ Steam Keystone tractor drilling machine with complete set of tools.

1—D-Cyclone, gasoline, tractor drilling machine with complete set of tools.

1—No. 30 Special Sparta, gasoline, tractor drilling machine with complete set of tools.

One 1,200 bbl. steel riveted tank, knocked down.

2—Twin 25 H.P. Oil Well Supply Co. Oil engines, with 5x12 Oil Well Supply Co. belt driven Mud Hog pump.

One 5x12 Vogt Bros. steam pump.

One 350 barrel steel riveted agitator.

THE TRACY SUPPLY CO., INC.,
Bowling Green, Ky.

FOR SALE—EQUIPMENT

5 Dean Triplex Pumps, 5 by 8.

1 No. 2, 1 No. 5, 1 No. 6, 2 No. 7, 1 No. 10, 1 No. 11, 1 No. 12 Sweetland Oil Filters.

Two 10-inch S. Roturbo Centrifugal Pumps. Six 10-inch S. Centrifugal Pumps. Steam Turbine.

Storage Tanks. Send for list.

Send us your inquiries.

We buy your surplus equipment.

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15 Park Row, N. Y. C. Barclay 0603.

FOR SALE—Two forty H. P. Superior Oil engines, reversible clutches, A-1 condition. Price on application. Box 660, Madison, Kans.

FOR SALE

Complete Standard drilling Rig. New Marion Rig Irons, new Boiler new drilling lines, drilling tools and fishing tools, everything needed to drill deep. Located in Western Kansas. Bargain for cash. Address Box C-11, The Oil and Gas Journal, Tulsa, Okla.

USED LINE PIPE AND CASING
FOR SALE

7—25-Hp. used gas engines.
10—6-in. standard rigs.

15,000 ft. 5⅜-in. used casing.
15,000 ft. 6⅝-in. used casing.
10,000 ft. 8¼-in. used casing.
5,000 ft. 10-in. used casing.

75,000 ft. 3-in. used line pipe.
50,000 ft. 4-in. used line pipe.
20,000 ft. 6-in. used line pipe.
For immediate shipment from our Texas yards.

KEYSTONE PIPE & SUPPLY CO.
607 Holmes Bldg.,
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FOR SALE OR RENT—Concrete mixers, hoist engines, air compressors, pumps, wheelbarrows, saw rigs, etc., Universal Supply & Machine Co., 201 S. Houston, Tulsa, Okla.

FOR SALE—Plant of Dixie Gasoline Co. Located about 15 miles from Brownwood, Tex. Inventories may be seen at office of H. H. Barrett, trustee. P. O. Box 296, Brownwood, Tex.

BOILERS

2—263 H.P. Heine ASME.
2—312 H.P. Heine.
Large stock of smaller boilers.

READING ENGINEERING WORKS,
32 N. Second St., Reading, Pa.

BURNERS

Gas—Oil—Combination
MID-CONTINENT GAS APPLIANCE CO.,
Tulsa Trust Bldg., Tulsa, Okla.

USED REED POWER with 16 foot wheel 125 foot belt and 35 HP Superior Engine. Good condition. Attractive price. Missouri Iron & Metal Co., Ft. Worth, Texas.

TANK CAR TANKS

Desire move quickly. If interested in storage, get our prices, etc. Carnes Equipment Co., Olathe, Kans.; or Sand Springs, Okla.

ONE 6¼ Wilson Underreamer used 3 days; one 6⅝ Bramer Upriper used only 15 days. Both good as new. W. E. Niles, 805 Scarritt Bldg., Kansas City, Mo.

FOR SALE—Two Rathbun three-cylinder Vertical Gas Engines 12¾ in.x15 in. direct connected to 75 KW, 250 volt direct current generators with five panel slate switchboard and equipment. All equipment in first-class condition. Priced to sell.

THE SMITH GAS ENGINEERING CO.
Dayton, Ohio.

AIR COMPRESSORS

50-ft., 49-ft. and 69-ft. Steam Drive.
355-ft. Ingersoll-Rand F. R. Steam D.
442-ft. Sullivan, WJ3 Belted.

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1—New 300-bbl. cap. 15 ft. dia. 27 ft. high.
1—Fine 250-bbl. Cap., 12 ft. dia. 26 ft., 6 in. high.
Both lead lined and equipped with ladders, walkways and fittings.

BOILERS

6—Erie 150-Hp. HRT 150 lbs. pressure.
3—Freeman 150-Hp. Scotch Marine 145 lbs. pres.
2—Erie 200-Hp. Scotch Marine 150 lbs. Pres.
3—500 and 2—468-Hp. Sterling water tubes.

CONDENSER BOXES

2—10 ft. wide, 40 ft. long, 8 ft. deep.
3—30 ft. wide, 30 ft. long, 8 ft. deep.
2—10 ft. wide, 40 ft. long, 8 ft. deep.
All equipped with 10-ft. compartments.

HEAT EXCHANGER

1—8 ft. by 30 ft. Heat Exchanger, has 4,000 ft. 4-in. pipe.

OIL ENGINES

3—25-Hp. Fairbanks-Morse & Type.
1—50-Hp., 1—75-Hp. and 1—150-Hp. FM Y's.
Can furnish generators to suit.

DUPLEX STEAM PUMPS

6 Gardner 7x5½x6, 4 in. suc. 3 in. dis.
4 Gardner 6x5¾x6, 4 in. suc. 3 in. dis.
1 Dean 10x7x10, 6 in. suc. 4 in. dis.

STEEL TANKS

6—55,000-bbl. cap., 1—25,000-bbl. cap.,
1—15,000-bbl. cap., 1—4,400-bbl. cap.
30 others from 250 to 4,000-bbl. cap.
10 scrubbers and pressure tanks.

STEEL STILLS

3—11 ft. x 40 ft., 1—14 ft. x 35 ft.
4—10 ft. x 30 ft., 1—8 ft. x 25 ft.
All complete with steel supports.

STEEL TOWERS

25—5 ft. dia. x 25 ft. high.
10—5 ft. dia. x 20 ft. high.
Also steel supports for same.

MISCELLANEOUS

1,000 valves 1 in. to 10 in. Screwed and flanged type. Many are new.
95 Reid Glass Peep Boxes.
10 Foamite 40-gal. Fire wagons.
6,000—6,500 and 8,000-gal. car tanks.

HYMAN-MICHAELS CO.,
Peoples Gas Bldg., Chicago, Ill.
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TEN 3-COMPARTMENT, 1,000-gallon Government truck tanks with cradles. Good condition. Address, A. & M. Petroleum Co., Box 599, El Paso, Tex.

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WANTED—Rotary rig complete, immediately, will buy or lease; must be in A-1 condition. Give full description and location in first letter. Box 411, Odessa, Texas.

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Do you need money to finish or go below contract depth? We may be able to assist you, write stating location and depth of well, kind of rig, amount of acreage, condition of hole, contract depth and all other information possible. Send geological map and report if you have one. Box C-33, The Oil and Gas Journal, Tulsa, Okla.

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HEMENWAY
Oklahoma City, Okla.

WILL PAY CASH
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United States or Canada
Must have gross sales not less
One Hundred Thousand Dollars
past twelve Months. Address
P. J. MINCK, 720 S. KENOSHA
Phone 4-0245 Tulsa, Okla.

WILL SELL one hundred shares Pantepec Petroleum Companies common stock at $13 per share. Box C-42 The Oil and Gas Journal, Tulsa, Okla.

FINANCE your project with stock bonded. Quickest and most satisfactory known method of raising capital. Information free. Bankers Interstate Security, Electric Bldg., Denver, Colo.

A GREAT BIG corner lot; three houses and filling station; close in; key to big rich part of city; $15,000 cash. MacDonald, 211½ S. Boston, Tulsa, Okla.

EXPERIENCED Oil Operator, owning standard rig and tools, now engaged in drilling wildcat wells in Texas, wishes to form an association with individual or oil company, capable of assisting in the financing of new wells, on large blocks of acreage, and the purchasing of semi-producing properties; man with legal training preferred; references exchanged. Box B-960, The Oil and Gas Journal.

CAPITAL—An experienced dependable broker with following will aid in financing a worth while proposition. B. W. 810 Broad St., Newark, N. J.

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H. L. BALDWIN
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Telephone 74
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WANT SUPERINTENDENCY of small refinery. Can design and construct if desired. Familiar with running of Panhandle crude on paying basis. At present employed; desire change. Available on 15 days' notice. Box C-49, The Oil and Gas Journal, Tulsa, Okla.

PETROLEUM ENGINEERING graduate with three years experience, desires work with oil company or in refinery. Now employed in oil testing laboratory. Permanency and chance for advancement more important than salary. Box C-41 The Oil and Gas Journal, Tulsa, Okla.

STENOGRAPHER-BOOKKEEPER—Young woman with five years experience wants position in either or both capacities. Independent operator or drilling company preferred. Call 4-1298 evenings. Box C-40, The Oil and Gas Journal, Tulsa, Okla.

FIRST-CLASS welder with executive ability, good education, wishes permanent position; age 25, married; best of references. Box C-30, The Oil and Gas Journal, Tulsa, Okla.

AUDITOR—Age 29, married, university graduate, experienced as public and commercial accountant as well as in office management. Also familiar with leases and royalties. Now employed but have good reason for change. Require salary of $300 a month. Good references. Box C-32, The Oil and Gas Journal, Tulsa, Okla.

TECHNICAL graduate, 7 years well drilling experience, wants position in producing or engineering department of producing company. Permanency and future advancement considered more than salary. Will go anywhere in U. S. Age 29, married, best of references. Box C-15, The Oil and Gas Journal, Tulsa, Okla.

GAS LIFT and gasoline plant engineer supt. with seven years' general oil field experience, desires position anywhere. Salary $300. Box C-12, The Oil and Gas Journal, Tulsa, Okla.

A DESCRIPTION of your used equipment run in these columns will sell it for you at a nice profit.

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A. L. HILLER
Fort Stockton, Tex.

FOR A WEEKLY report of all oil and gas leases, assignments, royalties, etc., filed in the Register of Deeds office in Canadian County. Write P. O. Box 427, El Reno, Okla.

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CHARTERS—Delaware best, quickest, cheapest, most liberal. Free forms. Colonial Charter Co., Wilmington, Del.

DELAWARE incorporators. Charters fees small, forms. Charles G. Guyer, 901 Market St., Wilmington, Del.

FOR SALE—DOGS

COONHOUNDS, combination hunters, fox hounds, champion rabbit hounds. Catalogue, photos free, trial. L. J. Adams, Ramsey, Ill.

HELP WANTED

$3,000 TO $25,000. Men find our Service effective in making connections. Individual. Confidential. Not agency. Jacob Penn, Inc., 9 Park Place, New York.

RAILROAD LUBRICATION
Service and sales engineer (preferably graduate) over 30; with minimum of three years' actual service experience in Railroad Lubrication. State details fully. Box C-48, The Oil and Gas Journal, Tulsa, Okla.

TERRITORIAL SALES REPRESENTATION WANTED
We are manufacturing and distributing a combination gas and oil burner particularly suitable for steam boilers above 100 horse power and oil stills. We have open sales territory in Kansas, Oklahoma and Louisiana. The burners are in successful operation in many of the largest power plants in the Southwest. We require high grade men with experience in selling power plant specialties. We have an attractive profitable proposition. Give complete details stating qualifications, etc. Forney Combustion Engineering Co., 305 Thomas Bldg., Dallas, Texas.

TERRITORY REPRESENTATIVE
Must have a good sales record preferably in the mechanical equipment or Boiler Room supply line. Acquaintance with buyers in industrial trade desirable. Only a responsible, ambitious man with real sales ability will be considered. To the man selected we offer an exclusive sales territory and thoro training. This is a permanent position selling products nationally used and backed by a bond. Replies confidential.
THE NORTH AMERICAN FIBRE PRODUCTS CO.
Cleveland, Ohio.

LEASES—PRODUCTION

LEA COUNTY, NEW MEXICO LEASES
State lands well located. Write for description and price.
LOS ANGELES-NEW MEXICO OIL CO.
114 S. Los Angeles, St., Los Angeles, Cal.

FOR SALE
OKLAHOMA
10 acres Atoka County Sec. 9-4s-13e.
10 acres Johnson County Sec. 19-2s-8e.
10 acres Sequoyah County, Sec. 20-13-26.
10 acres Cherokee County Sec. 11-19n-21e.
5 acres Pittsburgh County Sec. 17-3n-17e.
Will sell or lease. Owner, M. S. Barry. 3574 11th St. NW. Washington, D. C.

FOR SALE—Leases and drilling contract in new Edmonson County, Ky., field, located on structure near discovery well a second now drilling on same lease. M. M. Hobson, Bowling Green, Ky.

HAVE CONTROL several thousand acres in McKinley County, N. M. Part in Twp. 19N Range 7W. Can get one block of 7,500 acres. Johnson & Lodewick, Box 407, Roswell, N. M.

FOR SALE—Leases, Oil Production, Asphalt, Lime Stone and Other Mineral Lands. W. P. Harley, Bowling Green, Ky.

BARGAINS IN oil leases and royalties in Pecos-Brewster Counties. Co-operation. Particulars. Box 620, Fort Stockton, Texas.

WEST OF THE PECOS
On to Brewster
Squarely in the trend.
Mid-Kansas Oil & Gas Co.
Spud in September 7, 1927.
Write for maps, photographs.
40 acres up to 100,000.
R. E. Plumbe, 646 First Natl. Bank Bldg.
El Paso, Tex.

DRILLING BLOCK secured on approved acreage and well supervised; no bonus; we keep some acreage as fee. Nicolle, Petroleum Geologists and Operators, Box 1720, Fort Worth, Tex.

SOUTHWEST TEXAS — WINKLER, Loving, Reeves, Ward, Pecos, Culbertson Counties.
Drilling blocks, Leases, Royalties.
Ranches in fee.
H. F. Anthony, Pecos, Tex.

LEASES—PRODUCTION

SEMINOLE DISTRICT
Two tracts, 640 acres each, for immediate development. Price is low but subject to well requirement. Nothing else like this in Seminole territory. Want immediate action. Address Box C-47, The Oil and Gas Journal, Tulsa, Okla.

TEXAS PANHANDLE LEASES
Four sections for prompt drilling, no bonus required. Also three sections near development at special price if taken now. These are good. Have geology on first tract. Address Box C-46, The Oil and Gas Journal, Tulsa, Okla.

FOR SALE—Choice leases, royalties near large wells, Pine Island Field, La. Wildcat leases, royalties in Arkansas and West Texas. Some real bargains. Write me your wants. Box C-43, The Oil and Gas Journal, Tulsa, Okla.

NEXT BIG PLAY
5-year paid-up leases from 40 acres up on pronounced structure in Colorado-New Mexico, as described and shown on The Oil and Gas Journal Geological Map of Sept. 8, page 34. F. O. Harrell, 301 City National Building, Wichita Falls, Tex.

WINKLER—PECOS COUNTIES
Leases and Royalties
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Pecos, Texas

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ADDITIONAL CLASSIFIED WANTS ON PAGE 188

Week Opens Quietly in Chicago

All Products In Less Demand. Weather Slows Consumption of Gasoline. Market Waiting Developments in Prices

By J. B. Waldo

CHICAGO, Sept. 26. — The spot market opened the week quietly in all products, even kerosene being in less demand than recently. Motor gasoline sold moderately at 6¼ cents. There should be some buying for October this week but quotations over next month are slow in being made. There are some remnants of contracts for September which will have to be moved this week so that there is little chance of any real change in conditions or prices. The cooler weather, with rain, which opened the week may slow down consumption in the country but no matter if business is good or bad with the distributor no buying except for actual needs will be done until there is more confidence in the future of gasoline prices. The higher tests are responding slightly to the cooler weather but the demand is no more than fair.

The demand for kerosene was less active but prices held firm. Distributors of furnace oil state they are busy filling their consumers' tanks but the tank car demand for distillates and gas oils was not active with refiners on Monday although they feel sure it will come later and are maintaining their prices.

Fuel oil moved slowly with no large inquiries noted. Large consumers are still buying for their early needs and shopping round for the best price. Some refiners are holding their fuel oil, claiming they are unable to cover their coal requirements and may need it themselves. Very generally there is a waiting attitude for some distinct factor to develop that will give the industry more assurance regarding the stability of prices or their future trend. Refiners in a number of instances when asked for their price on various products over October or a longer period have replied that they had not decided on the manufacturing program for October and did not know what they would have to offer. With the distributor of gasoline the fear that makes him hesitate to buy for more than his actual trade is that the tank wagon scale may not only be reduced but that it is not impossible that changes may be made in that scale which will have an important bearing on the way of doing business.

Good Volume of Business

There were a large number of oil men in the city last week attracted by the Tunney-Dempsey match. Few of them came for business and the orders left behind were few and generally for small amounts. There was no real buying done as the result of these trips to the city. But it was possible to secure first hand pictures of the situation in many of the cities and towns of the territory. As a rule the dealers are doing a good volume of business. In many cases the coming of new competition has kept the volume of individual business at about the same level as last year but as there have been many additions to the list of oil men and of stations operated by older concerns, the total shows a decided increase in volume. Few claim to be making money or at least to be making any substantial profits. They say they are holding their own. Nothing to brag of, nothing to wail over for the most part. They are in business and no business is good all the time.

Regarding the cut prices many had something to say. Of course none of them started the cutting in their locality, but they have been meeting competition and see no way to avoid doing so and retain their gallonage. Some have commented on the fact that in their town or city the leading distributor has reduced its station prices and its tank wagon prices to the same level. In quite a number of prominent Indiana points this has been done and the flat price is 15 cents a gallon for gasoline. Places where this reduction has been include Indianapolis, Fort Wayne, South Bend, Muncie and a large number of less important points. Other large companies all of whom have reduced their prices have made the station price and the tank wagon price the same. The new prices are between 3 and 4 cents below the normal station price. Some believe that this action is simply a method of holding their business with the least possible loss. In a general way some allowance is made to the tank buyer who buys for resale. In one case the refiner allows its resale agents a discount of 2 cents a gallon. The Standard, so far as reported, continues its Q. D. A. plan which gives the buyer to sell again a varying discount according to the quantity purchased.

May Abolish Tank Wagon

There has been more or less talk for some time regarding a change in the price structure whereby the tank wagon price and the service station price would be the same. Some good oil men believe that in a more or less brief period the number of stations will be so great there will be little need of the tank wagon to distribute petroleum products to consumers. That the consumers at least of gasoline will find it necessary to come to the stations and that this will work no real hardship as there will be so many stations that no motorist will have to drive any distance to fill his tank nor the farmer to fill his drums. In no large city is gasoline delivered to the consumer; he comes to the station and buys and frequently has to drive as far for his supply as would the farmer in any fairly well settled district. There is also a perennial argument as to the cost of distribution by station and through tank trucks. Some of the oil men voice their opinion that the new price scale in effect in these Indiana towns and elsewhere in the territory are not wholly due to the local competition but are intended as a test of the practicability of distributing gasoline at the same price to the consumer by trucks or through stations. The thought is not very conclusive. For one thing a change of this sort made under pressure as it were and during a period of changing prices during a local price war, would not be a fair test. The results are surely being watched and the information gained may be applied later if it is decided by the large distributors to make a general change.

The present price system has been denounced as illogical and even as uneconomic many times but it has worked, possibly more through the influence of habit than for any other reason. It is a serious thing to try and make a decided change in the manner in which an industry is in the habit of conducting its business. The differential between the service station and the tank wagon price may not be justified by the facts but the industry is accustomed to it and will be very slow to change from it. If in time the number of stations is so great and their distribution so thoroughly covers the population that they answer all the needs of the public the tank wagon or truck of today will disappear.

Consumption Gains

The weather last week though lacking the warmth of the first two weeks of the month was very pleasant for motoring and consumption of gasoline was large. It might be a close guess that in this territory the actual consumption was from 15 to 20 per cent ahead of last year. With the cooler weather there will be less driving at night but also more touring by those so situated as to be able to enjoy autumn motoring. It may be remembered that last fall from this time on was not favorable to motoring. Cold weather came early and so did snow, especially in the Northwest. We had none of that delicious autumn weather which so often succeeds the summer in the Central West. If the weather this year should approach more nearly to normal than it did last year, there is no doubt that the consumption of gasoline will continue on an increased scale as compared with last year, that is larger than the increase due to the greater number of motor vehicles in use.

According to the best information gasoline stocks are not large anywhere east of the Rocky Mountains. Quite a number of refiners right now claim to have practically no supplies beyond their daily runs and in a number of cases the prices quoted for immediate delivery are a fraction higher than for deferred shipments. Several of the North Texas refiners report that they are occupied with filling export orders for the higher tests and will have no U. S. Motor grade to offer for a number of weeks. Some refiners are closed down so that the present outlook is for fairly stable prices so far as they are governed by existing conditions. What would follow a radical and wide spread change such as a crude decline or a tank wagon cut is quite another story but the trade here does not anticipate either at an early date.

Spot Market

Last week the spot gasoline market continued fairly active but as previously irregular with no signs of buying except for immediate wants. There were still many orders placed with "rush" instructions. Many of the orders were for small quantities, one, two or a few cars. Dealers in the country are not planning any increase in their stocks. The market opened last week with a price range of 6⅛ to 6¼ cents, the 6 cent gasoline having disappeared. Due to the gradual strengthening of the position due to the insistence of refiners that they must have a little better prices and the fact that in few cases was there any free offerings of gasoline, the market slowly but steadily worked to a little higher level and at the close of last week the market range here for U. S. Motor gasoline, doctor and corrosion tests, was at lease 6¼ cents with several refiners asking 6⅜ cents and some talk of going to 6½ cents. This was regarded as talk, or with indifference by buyers.

So far there has been little outside gasoline offered in this territory but to the east of Indiana there continues to be a struggle for business between the local refiners, the southern refiners and the East Coast where some California gasoline is available. The refineries located in the states between the Mississippi River and the Alleghanies are capitalizing their freight advantages and are doing a large and in many instances a capacity business. The demand for the higher tests has shown a little more activity due to the cooler weather in part at least and prices are in line with the slightly better demand. For the 60-62 400 the lowest quotation at which this could be purchased was 6½ cents and this price was not very common although quoted by some refiners direct. Most of those who were asking 6⅜ cents for U. S. Motor made a price of at least 6⅝ cents for the 60-62 400 endpoint and 7 cents for the 64-66 375 endpoint with others selling at 6⅞ cents. There was quite an active demand for natural gasoline and prices were strongly held with the A and AA grades in too limited supply apparently for a quick movement on orders.

Kerosene Firm

Kerosene continued very firm all the week with prices advanced by refiners and marketers to 4¼ and 4⅜ cents. Some refiners ask 4½ cents. The demand is of the kind made up of a large number of small orders, many single car orders or a number of cars for prompt delivery one to each of the buyer's stations. There was considerable complaint regarding slow deliveries and the impossibility of getting shipment. A number of refiners were buyers for their own needs as well as for their trade, so they stated. There has doubtless been some drain made on dealers' supplies by the tractor demand but this is about over and what is ahead is the steady use of kerosene for light and heat and to some extent for industrial purposes during the cold weather. It is a rather unusual fact that in the sections where the gasoline prices have been reduced by bringing the station and tank wagon prices to the same level, the actual prices for gasoline without the tax at the stations at the wagon and of kerosene at the wagon are higher than the gasoline price, less tax.

The prices at Indianapolis less tax are: service station, 12.2 cents; tank wagon, 12.2 cents, and kerosene, tank wagon, 12.2 cents. Of course at the many Indiana points where this is the case, the gasoline tax of 3 cents makes the gasoline prices the higher to the public. The latest price cut to this writing is at South Bend, Ind., where the tank wagon and station gasoline prices are 15 cents flat including the tax and kerosene is 13.4 cents or four-tenths cent higher than the gasoline price not including the tax. There is about the usual percentage of orders for the 42-44 gravity but these are so small by comparison with 41-43 orders that many refiners do not make the product and buyers pay 4¾ cents for such cars as they must have.

Distillates Move

Distillates are beginning to move with the coming of cold weather. The cold nights and days have made some heat in the homes desirable and this has resulted in a lot of rush orders on dealers for furnace oils. Dealers who a week ago complained they had not been able to induce their regular customers to permit them to fill their tanks and thus make room for further shipments which were due from the refineries, have asked this week for delivery of all oils due them on order and on some occasions have placed additional orders for deliveries at regular intervals beginning October 1. There are a number of the larger distributors who have made contracts and have some very cheap oil coming to them. They succeeded apparently in placing contracts with refineries at differential points at prices which delivered are at the very bottom of the market for spot business. As earlier intimated nearly every distributor of domestic burning oils has made some kind of provision to care for his business. Some have supplies on hand sufficient to start the season and run them for a while. Some have contracts covering all or part of their requirements. Right now their work is to fill up their customers' tanks and then wait for the real cold weather to come and bring the enduring, large demand. There is apparently no oversupply of desirable grades of distillate and the market is firm with a tendency on the part of refiners to hold their supplies for a rising market or for their contract customers. Some activity was felt last week in the way of orders for prompt delivery.

Gas oil is also firm but that is about all. There was little large business last

(Continued on Page 179)

Further Weakening in Eastern Market

Despite Favorable Consumption During September Intense Competition Is Forcing Down Gasoline Prices

By N. O. Fanning
New York Bureau, The Oil and Gas Journal, Room 629, No. 101 Park Avenue, New York, N. Y.

NEW YORK, Sept. 24.—September has proved a much more favorable month in refined oil consumption than had been anticipated by the eastern oil trade. Consumption has shown much less of a decline, according to marketers, than is usually the case as compared with August. The result is that some service stations which had been running lighter in stocks have been putting in bigger orders with refiners and jobbers and are keeping stocks up higher than they did during August. This policy has relieved refiners and jobbers somewhat.

So far as prices are concerned, the gasoline situation in the East has not reflected the favorable demand. This is because competition is still as keen as ever, with service stations, jobbers and refiners taking part. Retail gasoline throughout the East is showing further signs of weakening as individual stations cut prices, while it seems that refiners are willing to meet all competition and are offering U. S. Motor gasoline as low as 8 cents a gallon, f.o.b. refinery in tank car lots. Official quotations still are 8¼ cents, however, and it is believed the greater part of the business now being done is at that figure.

It is reported that the quantity of Mid-Continent gasoline moving into the Atlantic Seaboard territory in tank cars is showing an increase, and that this material is a disturbing influence in the market. This Mid-Continent gasoline is not all U. S. Motor, but includes considerable 54 gravity naphtha and also much natural gasoline.

More favorable factors in the gasoline situation, aside from warm and continued fair weather, include a smaller quantity of Seminole crude moving to eastern refineries, resulting in smaller gasoline output, and the apparent difficulty in procuring equally high-grade crude to replace it. Eastern plants have found that crudes from newer fields, including West Texas, do not replace high-grade Mid-Continent as a raw material from the viewpoint of gasoline production, and that it costs more to refine the crudes they are now using in larger quantities. With gasoline costing more to produce, many large refiners are expected to balk at selling U. S. Motor gasoline in unlimited quantities at the present low prices.

Kerosene Strong

Probably of equal importance to gasoline marketers as kerosene marketers is the strength in kerosene, which has been foreshadowed in these columns for the past several weeks. This strength resulted in water white kerosene being advanced during the past week 1 cent a gallon at Atlantic Coast refineries to 7½ cents in tank car lots. This is only one-half cent below the price quoted by some refiners for U. S. Motor gasoline. It would be unusual to see kerosene pass gasoline in price, but some factors here are predicting such a development. At least kerosene is showing unusual strength while gasoline continues weak.

That the strength in kerosene is partly seasonal goes without saying. But as pointed out in these columns both export and domestic consumption have been showing steady improvement and it was only a question of time when this would be reflected in prices. Two of the most important factors behind the advance in kerosene were the increasing use of furnace oil and improvement in export demand.

Gas and Fuel Oil

There have been no changes in gas oil or fuel oil prices on the Atlantic Seaboard during the past week, although the tendency is said to be firm. Gas oil is still available at 5½ cents a gallon in tank cars. Refiners do not seem to be pressing this product for sale, as they are awaiting better prices expected this winter. In fact, some do not think the present price justified in view of increasing demand for direct consumption and "cracking," and look for an advance of at least one-half cent a gallon within a few weeks.

Diesel oil is active and firm at $2.10 a barrel. Some buyers report difficulty in contracting for material at this price, as leading refiners claim their current production has been taken for several months in advance.

Bunker fuel is more plentiful at $1.65. Large receipts of heavy fuel oil from California and Venezuela have temporarily glutted the market, but in spite of this actual sales have been few and far between. Buyers seem to be more keenly interested in higher grades of fuel oil at present.

Lubricating Oil

Little change was recorded in the lubricating oil situation during the week, with motor oil demand exceptionally good and demand for industrial grades somewhat disappointing. Prices were unchanged. Because of an improved export demand the general tone of the domestic market was firm with regard to all grades.

It is reported here there has been marked improvement in Texas red and pale oils and that this will be reflected in a sympathetic advance in eastern competing lubes. In fact, it has been noticed that Texas lubricating oil makers have been less active in the eastern domestic markets. All in all, despite a disappointing demand in some directions, the general state of the lubricating oil market appears sound.

Eastern refiners report that much of the increased amount of oil being imported has practically no lubricating value and that from the viewpoint of raw material, the manufacturers of lubricating oil are going to continue to depend largely upon crude from the eastern, Mid-Continent and Gulf Coast fields of the United States.

Paraffin Wax

The paraffin wax market continues strong. Strength which has heretofore manifested itself largely in refined wax of the higher melting points has now been communicated to 120-22 and 125-7, which show advances during the past week of one-eighth of a cent a pound to 4 cents for 120-22 a.m.p. and 4¼ cents for 125-27.

This strength in the market is due to bigger demand by jobbers attributed to seasonal conditions, and to steady improvement in exports.

Petrolatum

The petrolatum market is unchanged although there is a firm undertone. Recent advances in amber, extra amber, lily white and snow white are charged to seasonal improvement in exports. Disappointment has been expressed over the inability of dark green to register any considerable improvement, as many factors are well stocked with this grade.

The Export Market

The improvement in the export kerosene situation has been commented upon in these columns during the past few weeks. This improvement is reflected in an advance in export kerosene at New York by the Standard Oil Co. of New Jersey on September 20, amounting to one-half cent a gallon. New prices are 16.65 for standard white in cases and 17.65 for water white in cases. Indications are that higher prices may be seen during the next few months as a result of a gain in foreign demand and general firmness in the domestic situation.

Probably the most important factor in the export kerosene situation is improvement in conditions in China, which have made possible a partial resumption of the kerosene trade there. This has been reflected in increased exports of kerosene in cases from New York refineries. During the past week there was a single lot of almost 1,000,000 gallons of cased kerosene loaded for Chinese ports.

If the purchase of Russian kerosene by American companies for the Far and Near East markets has affected American markets, it is not evident at this port, in as much as shipments of kerosene to these markets has been increasing.

Further reductions in oil prices in England are reported. On September 7, gas oil prices were reduced one-fourth d. per gallon, to 4¾d. per imperial gallon in tank car lots of 10 tons or over. Prices of other oil products remain unchanged.

The volume of shipments of all products from New York continues to hold up well. Bulk exports of gasoline for the two weeks ended September 21 exceeded 8,000,000 gallons. The movement of cased kerosene, as already indicated, is increasing, while lubricating oil and wax are showing up well. Exports of refined wax are going a little ahead of crude scale for a change.

European Situation

Oil exporters here look for a steady gain in industrial activity throughout Europe which may extend into next year. Tariff readjustments, loans from the United States and increasing political stability abroad are factors which, it is believed, will put Europe on a much higher productive scale. For this reason a steady improvement in demand for oil products is expected, and especially products used directly in connection with manufacturing, such as lubricating oils and wax. In fact the improvement in exports of the two latter products are regarded as reflecting this situation.

One feature of the New York export market during the past few weeks has been the increasing shipments of gasoline and kerosene in cases to West and South African ports. These shipments are made in lots usually ranging from 100,000 to 500,000 gallons each, and these quantities in turn are distributed among the numerous ports along the African Coast. Each port usually takes from 5,000 to 70,000 gallons. Although the market for gasoline or kerosene in each port is trivial, when the total of all ports is taken into consideration, it is considered a profitable business. The press of population in Europe is forcing many citizens of European countries into their African colonies, and they are taking with them the methods of their own civilization. This, together with the development of Africa's bountiful natural resources, is causing a steady gain in oil consumption. Furthermore, there is practically no commercial oil production in Africa, with the exception of a small amount in Egypt, much too little to supply even that country's requirements.

American oil companies are waiting to hear what group has been granted the Spanish oil monopoly, a decision on which is expected momentarily. While London advices are that the monopoly has been granted a banking group who are identified with Soviet oil interests, American companies have not heard anything to this effect.

With the monopoly plan now an effective law, oil companies expect that an award will have to be made shortly, in as much as under the new law only those granted the monopoly could conduct the marketing of oil. Other companies now engaged in the business would not be permitted to continue to function.

It is stated by those familiar with the Spanish situation that the new law does not make definite provision for indemnification for companies which have considerable money invested in their marketing installations in Spain. Unless these are acquired by the owners of the monopoly at a fair price, a new question of confiscation might easily develop.

Petroleum Exports

The following table shows principal exports of petroleum and petroleum products from New York during the last three weeks (all figures in gallons unless otherwise noted):

	Sept. 21	Sept. 14	Sept. 7
Gasoline:			
Bulk	2,805,054	5,205,127	.....
Cases	1,636,170	100,000	1,446,410
Kerosene:			
Bulk	.....	1,094,195	4,057,200
Cases	2,260,810	940,000	776,470
Lubricating oil:			
Bulk	.....	2,049,600	1,545,600
Bbls.	1,182,950	882,700	1,071,950
Cases	355,160	50,010	157,600
Lubricating grease:			
Bbls. (lbs.)	98,100	106,650	733,050
Paraffin wax:			
Bags (lbs.)	275,000	1,789,480	1,054,680
Bbls. (lbs.)	828,875	199,500	1,547,550
Petroleum asphalt:			
Bbls. (tons)	1,313	663	.....

The foregoing figures include all shipments of 500 bbls., 1,000 cases, or more.

Tanker Market

Despite the evident weakness in oil tanker rates, the number of vessels being placed continues small. According to experts on the market, there are few idle vessels. The present low rates is attributed to lack of competition for the few tankers that are becoming available, some of which had been tied up on one to two-year time contracts.

One of the most interesting fixtures of the week was that of the tanker James McGee (American) for California to Atlantic Coast trade, at 70 cents per barreel, for crude oil. This vessel has been in the Gulf to Atlantic trade for some time. It is believed that some other tankers which have been in the Gulf-Atlantic trade will become available for chartering in the near future, because of a shifting of the oil movement into import channels.

The feature of the tanker movement of oil to the Atlantic Coast during the week ended September 14 was a record for imports, which totaled 1,680,000 bbls., a daily average of 240,000. This large total, in turn, was due to record imports from South America which aggregated 1,068,000 bbls., a daily average of 153,000 bbls.

The receipts of oil by tanker at Atlantic Coast ports for the week ended September 21 from all sources totaled 4,801,000 bbls., a daily average of 686,000 bbls. Gulf Coast ports contributed 2,576,000 bbls., or 368,000 bbls. a day. California contributed 545,000 bbls., a daily average of 78,000.

Of the imports for the week ended September 21, the port of New York received 963,000 bbls. from Mexico, Venezuela, Peru, Colombia and Trinidad, combined.

Venezuela a Factor

Further indications of the importance of Venezuela as an oil-producing nation is found in the contract made by the Mexican Eagle Oil Co. with Venezuelan Oil Concessions, Ltd. (both Dutch-Shell subsidiaries) for the purchase of crude oil at the rate of several millions barrels per annum for from five to eight years. Following the precedent set by the Dutch-Shell company and Lago Oil & Transport Co., this oil will be transhipped from Venezulea to the Dutch Island of Aruba and will probably be refined there as soon as a plant can be completed.

(Continued on Page 179)

Fundamentals of Correct Lubrication

Proper Oils for Natural Gas Engine and Compressor Lubrication. Definite Operating Factors Considered

By A. J. Turner*
Standard Oil Co. of California

In the study of any lubricating problem certain definite operating factors must be considered.

In the design and operation of any piece of machinery, definite fundamental laws are followed in order to have an efficient unit.

To determine the correct lubricant the following factors must be analyzed, viz:

1. Speed.
2. Pressures.
3. Clearances.
4. Temperatures.
5. Distribution.
6. Material and finish of rubbing surfaces.
7. Whether moist or dry rubbing surfaces.
8. Whether lubricant is to be used internally or externally.

Of the above eight factors, clearance, temperature, condition of rubbing surfaces (wet or dry) and whether lubricant is to be used externally or internally, are the most important ones to study. Speed, pressure, materials and finish of rubbing surfaces, and distribution are practically standardized, varying slightly in present-day practice.

Clearances—Small clearances in bearings require light-bodied, quick-acting oils. Oils too heavy in body will not enter these small clearances until thinned out by increased heat which results in higher bearing temperatures and greater friction loss.

Larger clearances require heavier bodied, oils to maintain correct lubricating film under operating conditions.

Light-bodied oils would not maintain correct films and further would not be economical for large clearances (a piston and cylinder is considered the same as a journal bearing.)

Temperatures—The temperatures under under which the oil film is to be maintained, must be considered. Low temperature and small clearances require light-bodied oils; higher temperature surfaces require heavier bodied oils to maintain correct oil film in order to separate the rubbing surfaces.

Surfaces—If the rubbing surfaces are subjected to moisture, a compounded oil must be used such as steam cylinder oils, marine engine oil. For dry surfaces a straight mineral oil must be used. This refers to gas engines, air compressors, ice machines, etc.

Most Efficient Lubricating Oil

The lightest bodied oil that will maintain a lubricating oil film under the various operating conditions, is the most efficient oil to use, due to the fact that frictional loss will be reduced to a minimum, resulting in maximum output.

Oils for the efficient lubrication of gas engines, must reduce friction to the lowest possible degree, permitting of engine operation with resultant minimum wear of bearing surfaces. They must also assure perfect piston seal, thereby reducing fuel consumption and permitting maximum power development and minimum fuel dilution of the crankcase oil. Lubricating oil must also resist carbon formation for maximum hours of operation, in order to be considered as an efficient oil.

Adhesion—An ideal oil should have a high degree of adhesion, for on this characteristic depends the ability of the oil to maintain a perfect film on the bearings.

Cohesion—Cohesion is analyzed as internal or fluid friction; power is consumed in overcoming this factor. All oils possess cohesion but the heavier the oil the greater is its internal friction, consequently a larger amount of power is required where bearings are lubricated with heavier oils. The lower the degree of cohesion consistent with the work to be accomplished, the less energy is expended in permitting movement of the mechanism.

Oiliness, a combination of adhesion and cohesion, permits the oil to flow freely into small bearing clearances and establish an unbroken oil film on fast-moving bearings, imposing a minimum of cohesion or fluid friction in mechanism, reducing wear to the lowest possible point.

Gas Engine Lubrication

Piston Seal—The lubricating oil must adhere to the surfaces of the pistons, piston rings and cylinder walls in order to resist gas pressures tending to displace it. It must also resist the wiping or scraping action of the rings which constantly tends to break down the seal.

The cylinder walls and pistons constitute by far the largest bearing surfaces in the engine. The movement of the piston distributes the oil over those surfaces. While the area to be covered by this distribution is comparatively large, the thickness of the film so established is exceedingly small. High cohesion tends to prevent complete distribution of the oil and is of no effect in resisting gas pressures. In other words, a successful piston seal is entirely dependent upon the presence of sufficient adhesive qualities of the oil. Viscosity, cohesion, instead of assisting the piston seal, actually reduces it if present in too great a degree.

"Fading zones" of lubricating oil films can usually be attributed to the selection of oils too heavy to admit of rapid distribution.

Carbon—Certain proportions of the lubricating oil are carried past the pistons into the combustion chamber, where it is exposed to exceedingly high temperatures of combustion. Although this oil cannot be completely consumed because of the lack of necessary oxygen it will, nevertheless, be directly affected by these high temperatures.

Oils, which under these high temperatures, deposit excessive amounts of carbon are said to have high carbon-forming tendencies, and on the contrary, oils which under these conditions produce a comparatively small amount of carbon, are said to have low carbon-forming tendencies. The carbon resulting from these high temperatures is deposited either in the oil itself where it remains in suspension or becomes attached to the metallic surfaces of the engine.

The character of the carbon formed by different lubricating oils, varies, some carbon being of a light, flaky, soft nature, while others are hard, gritty or granular. The soft flaky carbon when mixed with the oil has little or no effect on its lubricating value, while hard and gritty carbon does effect its lubricating value.

Carbon deposits are traceable to atomized crude oil in the natural gas. Varying small percentages in the gas directly effects the correct lubrication of the pistons, etc., and further increases the tendency of fouling the piston rings. Gas engines as designed, cannot burn the atomized crude oil. The gas should be scrubbed or cleaned for efficient operation in order to produce minimum consumption of lubricating oil as well as minimum ring trouble.

Oil Distribution

Lubricating oil may be delivered to the bearing surfaces by splash or mechanical methods. Mechanical lubricators are the ideal units to distribute the lubricant for the reason that regulated amounts may be delivered by pressure to the vital points of the mechanism. They are not affected by temperature to the degree that the nonmechanical methods are.

For further refinement the mechanical lubricator can be timed so as to admit the lubricant to cylinder during periods of low temperature and pressure. In certain large Diesel engines the lubricator is timed to admit the oil at the end of the suction stroke, an ideal point on account of the lower temperature part of the cycle.

The number of points of application to the cylinder depends upon the diameter of same. The larger the diameter the greater the number of points of application. Each point should have a direct lead from the lubricator, no branching of one lead to two points should be considered because one of these branches may have less resistance than the other and as a result unequal amounts of oil will be delivered to the piston. Separate leads overcome this possible chance for trouble.

On large vertical Diesel engines a lack of adequate oil film on parts of the cylinder walls and pistons was traced to a one load, two branch connection. With the mechanical lubrication an ideal "equilibrium oil feed" can be determined and maintained at all times for the unit under consideration.

Quantity-Oil Feed—The quantity of oil necessary to efficiently lubricate a natural gas engine depends upon several factors, some of which are:

1. Cleanliness of the fuel.
2. Cleanliness of air for combustion.
3. Mechanical condition of unit.
4. The richness of the gas—incomplete combustion.
5. The character of the lubricant.

Each of the above factors govern the quantity of lubricant necessary to a satisfactory lubricating oil.

Compressor Lubrication

Gas Compressors—To correctly lubricate the gas compressor it is essential to use highly refined oil, amber in color, and of a medium heavy body. An oil of this character will not leave any objectionable deposits in the cylinders and on the valves.

A minimum amount of oil should be fed to the cylinders of the compressors because there is no need for larger amounts. Too much will result in carbon troubles and the nature of the carbon will depend upon the type of lubricant used. (See paragraph—Carbon).

The quantity used may have to be varied in accordance with the gasoline content of the natural gasoline. When recompressing the tail gases the gasoline content is high. Under these conditions a greater quantity will have to be used on account of the dilution effect of the gasoline on the lubricating oil.

Air Compressors—A suitable air compressor oil is one that will efficiently lubricate the moving pistons and maintain an effective seal in the cylinders. It must also be unaffected by the introduction of atmospheric moisture with the intake air, and must resist the tendency to oxidize in the presence of highly heated compressed air. The selection of oils of extremely high flash point does not overcome this condition, but tends to aggravate the formation of carbon deposits. This is because the difference between the actual flash point of high and low flash oils under high pressure is negligible; however, high flash point oils have high viscosities with the tendency to accumulate impurities from the intake air and form excessive deposits. A low viscosity oil, otherwise suitable will deposit a minimum of carbon in the cylinders and should be selected for air compressor lubrication. Excess lubrication should be avoided for the oil consumption of air compressors is very small and any surplus over that actually required will tend to accumulate and foul the pistons, valves and piping with carbon deposits.

Operation—In the operation of a gas driven compressor station, care and thought should be given to the circulating water arrangement, especially the discharge. Where open discharge of circulating water is maintained, investigation should be made to determine whether the water is being syphoned and further, whether the water jackets of the gas engines and air compressors do not have air pockets in the top portion. If this exists, there is opportunity for hot spots and a reduction in the lubricating oil film on the surfaces adjoining same. Too much stress cannot be laid upon this point. The circulating water should be investigated for scale, as any scale deposited in the water jackets of the gas engines or air compressor cylinders will reduce the heat transfer and make it necessary to feed excessive amounts of lubricating oils.

Where water has any scale-forming properties a closed circulating system should be provided using only clean water to eliminate any possibility for scale. In order to eliminate drying up of the lubricating oil film on the cylinder walls it is desirable to have a certain amount of circulating water continue to flow through the water jackets for a period of time after the unit is shut down. This will cool off the cylinder surfaces and permit the oil film to remain until the machine is again put in use.

*Read before September meeting of California Natural Gas Association at Los Angeles, California.

AUTOMOBILE OUTPUT FIFTEEN PER CENT LESS

August production of motor vehicles, according to the Department of Commerce, was 303,040 cars and trucks compared with 263,406 in July and 422,294 in August, 1926. Included in last month's total are 271,325 passenger vehicles and 31,715 trucks. Passenger car output is 108,957 units below August, 1926, when output was 380,282; and truck output is 10,297 below output of 42,012 in the corresponding month a year ago. Figures for 1927 represent only the output reported to the National Automobile Chamber of Commerce and do not include Ford, whose plants were out of production during August.

For the first eight months of 1927, total motor vehicle output in the United States, excluding Canada, was 2,593,154 against 3,082,569 in the corresponding period a year ago, a decline of 489,415 units or 15.08 per cent. Passenger car output was 2,283,387 against 2,767,706, a decline of 484,319 or 17.4 per cent, and truck output was 309,767 against 314,863, a decline of 5,096 or 1.5 per cent. Canadian figures for August are not available.

OIL AND GAS LEASES

The Commissioners of the Land Office of the State of Oklahoma will receive sealed bids until 2 o'clock p.m., on October 11, for oil and gas leases on school and state lands in Pawnee County: SW NE, Section 36-21n-8e, 40 acres; S half NW, Section 36-21n-8e, 80 acres; NW SE, Section 36-21n-8e, 40 acres; N half SW, Section 36-21n-8e, 80 acres. The commissioners will receive bids until 2 o'clock p. m., on October 18, for oil and gas leases on tracts in Oklahoma County: NE, Section 36-11n-3w, 160 acres; SE, Section 36-11n-3w, 160 acres.

REFINING AND MARKETING

Gasoline Consumption 10.9 Per Cent More Than July Year Ago

Florida and Missouri were the only two states whose gasoline consumption in July of this year was less than the corresponding month of 1926, according to a report compiled by the American Petroleum Institute. The report which is summarized in the following table is based on gasoline tax returns in 32 states. Florida's gasoline consumption decreased from 22,176,000 gallons in July of last year to 17,428,000 gallons in July of this year. In Missouri the gasoline consumption for the two months dropped from 30,637,000 gallons to 28,997,000 gallons. In the case of Florida the reduction in consumption is exp'ained as being due to the collapse in the boom development which was under way the greater part of 1926.

For the 32 states the total increase in consumption in July, 1927, over July, 1926, was 49,584,000 gallons or 10.9 per cent. Comparing the seven-month period for the two years ending August 1, the increase in gasoline consumption was 3,352,261,000 gallons or 9.5 per cent.

For the first time a report of gasoline sales in New Jersey is available, the first tax in that State being effective July 1. A total of 33,305,000 gallons were sold during the month.

Gasoline Consumption By States,	July, 1927 Gallons	July, 1926 Gallons
Alabama	13,550,000	12,304,000
Arkansas	9,596,000	8,963,000
Delaware	2,284,000	1,819,000
District of Columbia	5,258,000	4,802,000
Florida	17,428,000	22,176,000
Georgia	16,507,000	13,840,000
Idaho	4,928,000	4,569,000
Indiana	32,995,000	29,318,000
Kansas	31,847,000	29,270,000
Kentucky	12,278,000	10,987,000
Louisiana	12,847,000	12,219,000
Maine	10,325,000	9,454,000
Michigan	65,157,000	57,584,000
Minnesota	31,909,000	30,492,000
Mississippi	10,989,000	10,395,000
Missouri	28,997,000	30,637,000
Nevada	1,579,000	1,158,000
New Hampshire	5,728,000	5,367,000
North Carolina	18,645,000	17,298,000
North Dakota	8,507,000	6,832,000
Ohio	75,686,000	71,738,000
Oklahoma	24,435,000	18,800,000
Oregon	14,505,000	12,590,000
Rhode Island	6,509,000	6,154,000
South Carolina	9,114,000	8,208,000
South Dakota	7,398,000	7,231,000
Texas	53,255,000	49,304,000
Utah	4,699,000	2,609,000
Virginia	16,099,000	14,181,000
Washington	21,119,000	19,065,000
Wisconsin	36,037,000	32,496,000
Wyoming	3,387,000	2,780,000
Total	614,197,000	564,613,000
Daily Average	19,813,000	18,213,000

CHICAGO P. O. BIDS AS TRADE INDICATION

CHICAGO, Sept. 26.—Bids to supply the motor vehicle department of the Chicago postoffice with its gasoline are looked forward to by the trade as sometimes indicating the thought of bidding companies regarding the future of prices. However, the quantity required, 220,000 gallons over three months, is comparatively small The bids made public for three months' supplies, from October 1 to December 31, are made in three forms as usual. The first price required is a flat price for each month over the term. The second price is based on the current Chicago tank wagon price. The third bid is a wholesale bid based on the market price of gasoline in Group 3, and the bidder gives the rate at which he will make the purchase and a handling charge. The gasoline is bought, shipped to the bidder's storage at the government freight rate, unloaded into the tanks and delivered to the postoffice tank truck. The following is a copy of the bids made public by the Postoffice Department. No award of the contract for the next quarter has been made. The Shaffer Oil Refining Co. is supplying the gasoline to the department for the current quarter. The bids of some of the companies indicate they do not want the business at this time but have bid to be kept on the list. For example, The Texas Company's bid of 4 cents above the tank wagon price could not have been made with any expectation of landing the contract as it was out of line with previous bids. The details of the bids follow:

RETAIL BIDS—FLAT RATE

	1 Mo.	2 Mo.	3 Mo.	Based on T. W.	Max.	Cash Dis. 10 Days
The Texas Company	No Bid			.04 above t. w.	....	...
Geo. C. Peterson Co.	.10¾	.11	.11	.03 below t. w.	....	1%
Shaffer Oil Refg. Co.	.115	.115	.115	.045 below t. w.	.115	1%
Deep Rock Oil Co.	.115	.115	.115	.045 below t. w.	.115	1%
Standard Oil Co.	.09	.09	.09	.05 below t. w.	....	....
Seneca Pet. Co.	.095	.095	.0975	.045 below t. w.	.0975	½ %
Jewett & Sowers	.12	.12	.12	.06 below t. w.	.12	....

WHOLESALE PROPOSITION

	Differential Quot.	Handling Charge	Ttl.	Max.	Cash Disc.
Geo. C. Peterson Co.	.01 per gallon above t. c.	.01	.02	.075	1%
Shaffer Oil Refg. Co.	.0025 per gallon above t. c.	.005	.0075	.065	1%
Deep Rock Oil Co.	.0025 per gallon above t. c.	.005	.0075	.065	1%
Seneca Pet. Co.	.00125 per gallon below t. c.	.00625	.005	.0675	½ %
Apex Motor Fuel Co.	at tank car	.005	.005	.0725	1%
Jewett & Sowers	.0025 per gallon above t. c.	.004375	.006785	.06625	...
Roxana Pet. Corp.	.07 flat rate per gallon	No bid	.....	.07	1%

The differential bids based on the tank wagon price cannot be taken as an indication of a prospective tank wagon decline. The majority of the bidders named a rate of 4½ cents below the tank wagon while the Standard Oil Co. of Indiana named 5 cents below and Jewett & Sowers, 6 cents below the tank wagon. The question of taxes has led to the Federal Court enjoining the State from collecting the gas tax on gasoline used by the Postoffice Department and by the city. The bid of 6 cents below the tank wagon calls for a delivered price f. o. b. sellers' tanks, Chicago of 8 cents. Should the tank wagon be cut the bidder would receive that much less for his gasoline and a cut of 2 cents would mean a delivered price of 6 cents.

RATES TO COLORADO ALLOWED TO STAND

The Texas and Louisiana refiners were allowed to continue shipping petroleum products into certain Colorado points at the present rates after a hearing before Examiner W. J. Walsh of the Interstate Commerce Commission during which the Chicago, Burlington and Quincy Railroad had proposed rates which would add from $100 to $150 per car to the cost of transportation to these points.

After testimony had been presented the carriers conceded that about three-fourths of the territory, from Denver and Cheyenne, Wyo., and from Sterling, Colo., to the Colorado-Nebraska state line, should retain the present rate of 52½ cents per hundredweight, but continued in their contention that increases to 62 cents should be granted in that territory east of Brush, Colo., and east of Sterling.

The Chicago, Burlington & Quincy Railroad contended that the rates from Texas and Louisiana to Colorado were lower than those on the same commodity from Oklahoma and Kansas to Colorado, although the distance from refineries in the former is greater. The case originated when an Oklahoma shipper complained to the Interstate Commerce Commission, charging discrimination in favor of Texas and Louisiana shippers.

GASOLINE TAX BASIS PROTEST IN NEBRASKA

The State of Nebraska recently passed a law providing for the payment of a gasoline tax of 2 cents per gallon based on the capacity of the container in which the gasoline is received. In the case of tank cars, the tax was based on the shell capacity of the car. Since the shell capacity of a car is measured at a temperature of 60 degrees Fahrenheit the volume of gasoline received by the purchaser varies from the shell capacity of the car as the temperature varies from 60 degrees. During the summer when the temperatures are from 80 to 100 degrees the actual volume of gasoline received, corrected to standard temperature, will be from 1 to 2 per cent less than the shell capacity of the car. Because the summer shipments exceed the winter shipments, distributors contend that over the year they are obliged to pay tax on material they do not receive and cite the following example:

This month one Nebraska company imported about 700,000 gallons tank car capacity. These cars aggregated 4,000 gallons short. So while this company was entitled to 14,000 gallons allowance, they only received 10,000 gallons. In other words, they paid tax on 4,000 gallons ($80) which never existed.

The Nebraska Independent Oil Men's Association is now investigating this problem.

NATURAL GAS IS USED IN CINCINNATI TRUCK

CINCINNATI, Ohio, Sept. 26.—Natural gas instead of gasoline is being used in a 24 horsepower truck owned by the Union Gas & Electric Co. here, at a gas cost of three-quarters of a cent per mile against 2 cents if gasoline were used. Substitution of a steel tank and an air mixer for gasoline tank and carburetor constitute the departure from conventional design. The tank is constructed to withstand a pressure of 200 pounds per square inch and has a capacity of 33 cubic feet. Tank pressure is reduced to about 4½ ounces by two regulator valves. Speed ranges from 3 to 40 m.p.h.

Tests show that 10 cubic feet of gas at low pressure will operate the truck 1 mile, which at a cost of 75 cents for 1,000 cubic feet of natural gas, is three-quarters of a cent per mile. If manufactured gas is used the cost would be twice as much because it contains only about half as many heat units. The principal disadvantage is the large size of the tank.

ENJOINS COLLECTION OF TAX IN GASOLINE

CHICAGO, Sept. 26.—Federal Judge Carpenter has granted a temporary injunction restraining A. C. Bollinger, director of finance, State of Illinois, from collecting the gasoline tax of 2 cents a gallon on sales made by the applicant, the Shaffer Oil & Refining Co., to the Federal Government and the city of Chicago.

The Shaffer Oil & Refining Co., holds the contract to supply the city and the Federal post office here with motor fuel. Both of these buyers have refused to pay the tax alleging the tax is not constitutional. The court also issued an order restraining Mr. Bollinger from beginning a court action to revoke the company's license to do business in the State for failure to pay this tax, until the hearing on a permanent injunction has been had.

Standard of Indiana Industrial Relations Meeting at Chicago

CHICAGO, Sept. 26.—The ninth annual meeting and dinner of the Industrial Relations Plan of the Standard Oil Co., of Indiana was held at the Congress Hotel today with about 135 delegates from the local organizations at the Standard refineries at Whiting, Ind., Wood River, Ill., Sugar Creek, Mo., Casper, Greybull and Laramie, Wyo., and from the general office at Chicago. Each delegation consisted of one-half representatives of the employes and one-half representative of the management. The delegates represented the joint general committees in charge at each refinery and at the general office.

The morning session was devoted to the hearing of reports from a spokesman from each delegation of the various joint general committees. These were as follows: H. Earl Courtney, oil inspector, Casper refinery; J. R. Douglas, stillman, Greybull refinery; Ed L. Wood, car loader, Laramie refinery; Kenneth F. Jaques, stenographer, Sugar Creek refinery; Harry Wheeler, helper, Whiting refinery; William Shawmaker, employment manager, Wood River refinery and L. E. Harmon, assistant auditor, manufacturing department, Chicago office.

The afternoon session considered papers relating to industrial relations. The first was by H. A. Rowlands, head engineer, combustion department, Casper, his subject being, "Basing Promotions and Demotions Upon Seniority Rights." "The Principles of Fair Dealing Between Management and Employes," was discussed by A. W. Stricker, shift foreman, Greybull. H. M. Gray, watchman, Laramie, spoke on the "Education of Employes on Standard Oil Products." L. C. Howard, safety director and fire marshal, Sugar Creek, made a talk on "The Value of a Booster Club in the Manufacturing Department as an Aid to Sales." "Additional Methods for Assisting Sick or Injured Employes of the Company," was the subject of an address by Sam Hefter, pipefitter, Whiting. A. F. Houer, a helper at the crude stills at the Wood River

(Continued on Page 187)

DR. BROWN TO SPEAK AT SEVERAL MEETINGS

The Association of Natural Gasoline Manufacturers has received several requests for papers to be read before engineering and marketing organizations and in a joint meeting of the association executive committee and the research committee on September 27, it was decided to accept these invitations. Dr. G. G. Brown of the University of Michigan, who is head of the research department, will deliver a talk on "The Motor Fuel of Tomorrow," at the Kansas City meeting of the Four State Jobbers (Missouri, Iowa, Nebraska and Kansas) on October 4.

Doctor Brown will also deliver a talk on "Natural Gasoline, as a Component of Motor Fuel" at the meeting of the American Institute of Chemical Engineers to be held in St. Louis early in December. A second representative of the association will appear on this program and will discuss certain phases of the manufacture of natural gasoline but the exact subject has not been announced.

On October 11, Doctor Brown will deliver a talk before the managing committee of the American Gas Association in Chicago. The subject will be announced later. Doctor Brown will also attend the meeting of the California Natural Gasoline Association on November 15 and 16 and will deliver a paper there.

Technical Questions Answered

BY CHARLES K. FRANCIS, PH.D., TECHNICAL EDITOR

The Question and Answer Department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry. Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with the marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible so as to assure a satisfactory answer.

All inquiries should be signed and if other than the given initials are to be used please indicate the desired. letters.

Questions involving patented processes, intricate formulas and calculations and estimates of costs, for obvious reasons, cannot be answered. The replies will appear on this page within a reasonable time.

SPECIFICATIONS FOR WIRE ROPE

Please tell us where we can obtain a complete copy of the American Petroleum Institute specifications, chemical and physical, for wire rope drilling lines as used in the petroleum industry?—K. S. W.

These specifications will be found on page 128 the September 22 issue of The Oil and Gas Journal. Carl A. Young, 1508 Kirby Building, Dallas, Tex., is director of the Division of Standardization of the American Petroleum Institute, and will supply you with copies of these tentative specifications. The address of the main office of the American Petroleum Institute is 250 Park Avenue, New York City.

An interesting recommendation, contained in these specifications, is "do not use babbitt metal, or lead, for socketing wire ropes. If they are used the strength of the fastening will be much less than the strength of the rope." The previous sections 18-f and 18-g describe the use of zinc for this purpose.

"The base of the socket should be sealed with putty or clay or any similar substance. Pour molten zinc into the basket until it is full. The zinc must not be too hot or it will anneal the wires, particularly for small ropes. The temperature shall not be above 830 degrees Fahrenheit. When the zinc has solidified sufficiently, the socket may be plunged into cold water. If socketing is properly done the strands will break near the middle of the specimen, not at the end of the basket. Pine stick test to be made. If it chars but does not ignite, the zinc is ready to pour. If zinc is overheated it has a red color and stick will catch fire."

VAPOR TENSION NO INDICATION OF POWER

What is the pressure which can be produced during the evaporation of commercial gasoline? Is this pressure related to the power which it is possible to generate in the motor? Does it indicate stability under road conditions and the mileage rate of the gasoline?—B. E. W.

If the vapors were confined, the pressure would increase as the temperature increased and would reach a maximum pressure at some temperature. This temperature would be found to be different for different kinds of gasoline. It is assumed that the first question relates to evaporation at ordinary temperature. There may be considerable differences in many properties of the gasolines made by various refiners, because of differences in the quality of the crude oil and refining methods; there is much variation in the pressure of the vapor, or as we prefer to call it, the vapor tension. This vapor tension may be determined at 100 degrees Fahrenheit. It is necessary to select some temperature as a standard. The vapor tension of motor gasoline must be below 10 pounds to the square inch because of safety regulations, so we may find products having a vapor pressure close to the limit, however, many gasolines are on the market which show only 2 pounds. The better grades, when tested at 100 degrees, have vapor tensions in the neighborhood of 6 pounds.

There are so many more important factors which have to do with the power possibilities of a motor fuel, that the vapor tension may be considered to be a property of minor value. At any rate, it cannot be set down as a safe indication of power. The pressure set up by the vapor of gasoline reflects the degree of vapor or gas-forming substances that are present. The character of these substances may be quite different, as found in different gasolines, and therefore might or might not have some influence on the actual power value of the fuel.

A gasoline having a high vapor tension will show a greater loss under road conditions than another gasoline with a low vapor tension. The vapor tension value should not be used for the purpose of interpreting or classifying gasolines for stability. The distillation test, and especially the recovery percentage, should be of more value for determining stability. There is also no relation between vapor tension and the mileage rate of the gasoline. The motor and many other things are more important.

AIR OR GAS LIFT ON SHALLOW WELLS AND SMALL PRODUCTION

We are producing about 100 bbls. in a well at 1,500 feet and wonder if an air or gas lift would pay and increase this production after we have several more wells on the lease?—S. R. M.

The best advice which we can get about air or gas lift operation is that you would be more liable to do harm than good under the conditions. S. F. Shaw states that the air lift is applicable to pumping in oil wells only under certain circumstances, and when employed under other conditions the efficiency cannot be other than low. Owing to the comparatively great depths under which air lifts are obliged to operate in oil wells, the usual design of air lift must have a great submergence—that is, where wells reach a depth of from 2,000 to 3,000 feet, the submergence must range from 400 to 1,000 feet to permit even a low degree of efficiency. An air lift properly designed would secure much greater efficiency, and could operate under less submergence than 400 to 1,000 feet. If the quantity of fluid to be handled is small it is not likely that a proper submergence can be obtained, and the efficiency would be low. Possibly conditions could become such that there would be no flow. By a small quantity I mean 100 bbls. per day where conditions are not favorable. The necessary submergence could be obtained by sinking the well to an additional depth of 400 feet or more beyond the sand from which the oil is to be extracted, but this would be expensive and would not be economical except in relatively few instances. Where the flow is 1,000 bbls. of fluid a day the air lift can usually compete with any pump; and when 2,000 bbls. per day is to be handled, conditions are rarely such that any other means of pumping can be employed than the air lift.

BONE CHARCOAL

What treatment does dried bone have to go through other than burning to render it fit for filtration? If a dried bone is dried in the air and then crushed to a 60-mesh for filtration purposes, would the bone have to undergo any chemical treatment other than being burned in an enclosed retort?—B. V. S.

Bone black, known also as char bone, and animal charcoal, was formerly widely used for removing the color from wax and brightening certain lubricating oils. It has been almost entirely replaced by fuller's earth.

As the name animal and bone charcoal indicate, it is prepared in a manner similar to that used for making ordinary charcoal. Instead of converting wood into charcoal, bone is the substance heated. Special retorts are provided where the granulated bone is heated without the access of air. Under these conditions the hydrogen, oxygen, nitrogen and other compounds are decomposed and driven out of the retort. These substances consist largely of water, oils and fats. This is an outline of the process and there need be no chemical treatment for making the ordinary grades.

Bone charcoal is reported to give good results for the final bleaching of wax, that is, wax which has been partially bleached to a condition where there is but little more than a trace of color. Bone charcoal is used also for the removal of odors.

The ordinary clay burner is not adapted to the recovery and revivication of bone charcoal so special apparatus must be used. The charcoal which may be saturated with oil and wax, is heated in a retort to which is connected a condensing system. The material to be reclaimed is placed in trays or boxes and these set in the retort. The temperature is raised high enough to evaporate the oil and wax, then the retort is permitted to cool for several hours. While still quite hot the trays are removed, covered and sealed and set aside for complete cooling.

SAMPLING PRODUCT FROM TANK CAR

What is considered to be the proper method for obtaining a sample of any petroleum product from a tank car? Is there any reason to make a distinction when collecting samples of gasoline and samples of lubricating oil?—H. A. P.

So long as a representative sample is obtained it makes no difference how it is withdrawn. There are several special sampling instruments obtainable, most of these are modifications of the tank-thief, which may be so adjusted that a sample of the liquid may be drawn from any desired depth. A weighted bottle attached to strong string is the common instrument used for this purpose. There is objection to the use of cans because one cannot be certain that they are absolutely clean. Sometimes particles of gums and chemicals used in the manufacture of a can have caused mistakes to be made concerning the quality of gasoline and lubricating oil. A clean pint bottle, encased in a basket of lead is very good.

While we have seen very few examples of differences in the quality of samples drawn from the same car, it is well when the matter is of exceptional importance, to draw samples from three depths. The first from 4 to 6 inches below the surface; the second at the middle; and the third from the bottom of the car. A second string is attached to the cork, set loosely in the mouth of the bottle, so that it may be withdrawn when the bottle has reached the desired level. An average sample is frequently taken by lowering the open bottle to the bottom and then bringing it to the surface. The movement should be so timed that the bottle is filled at the end of the second trip.

We cannot think of any reason why the above methods will not prove satisfactory for both gasoline and lubricating oil.

PRODUCTS OF COMBUSTION

When fuels, such as coal and oil, are burned in a furnace the flue gas contains both carbon monoxide (CO) and carbon dioxide (CO_2). Is the monoxide formed from the dioxide or the reverse?—E.T.P.

Investigations have demonstrated that the quantity of carbon monoxide increases as the velocity of the air is raised; also the quantity becomes greater as the temperature is raised. The opposite is true with respect to carbon dioxide. These observations apply when the furnace has been brought to a standard condition and a base established.

The rate with which the oxygen is used and carbon dioxide formed is the same; consequently, the quantity of carbon dioxide produced must be in proportion to the quantity of oxygen available. We frequently say that the percentage of carbon dioxide is a measure of the extent of combustion under the existing conditions. This need not be true, as suggested above.

A definite quantity of carbon will unite with a fixed quantity of oxygen to form carbon dioxide. Carbon monoxide, carbon dioxide, and oxygen are found in flue gases because the conditions necessary for complete and exact combination do not exist in the furnace. When air is admitted to a burning material in excess of that required for complete consumption of the carbon, then there will be a reduction of the carbon dioxide, first formed, to the carbon monoxide. There is more carbon present than is required, it is hot, and other conditions are favorable for action on the carbon dioxide gas, so the result is that it is reduced to the monoxide. In other words the dioxide is a primary or natural product of combustion and the carbon monoxide is a secondary or abnormal product of combustion.

DEGRAS FOR COMPOUNDING OILS

What is the principle source of degras which is used in greases and compounded lubricating oils? What is the action of degras when it is used for this purpose? —F. D.

Degras is a special fat which is prepared from the washings of crude wool, the washings of sheep, and to some extent as a waste product in the manufacture of leather.

Alkaline solutions are used to extract the crude grease from the wool, then it is separated from this solution by the addition of acid.

The action of degras in a compound is said to aid as a body former and cause even distribution. It also has an influence on the melting point and pour point. The pour point may be lowered several degrees by the addition of a very small quantity of degras. Its presence may usually be detected by its peculiar and characteristic odor, especially upon evaporation or burning a small quantity.

Beyond the Range of All Other Methods

67 feet in length — 10 feet inside diameter —wall thickness 3½ inches

On July 14th, 1927, the record breaking cracking still shown above was completed and shipped.

The achievement in building a cracking still of such capacity, important as it is to the oil refining industry, is overshadowed by the co-ordination of engineering, laboratory and production facilities that make possible the building of Smithsteel Cracking Stills, large or small, standard or special, to meet usual or unusual refinery requirements.

The Largest Still Ever Built

This still is the largest cracking still ever built, almost 70 feet long, 10 feet inside diameter, and wall thickness of 3½ inches, weight 366,600 lbs. The largest still built previously was also of Smithsteel, with a length of 65 feet, diameter of 8 feet and wall thickness of 3½ inches, weight 268,000 lbs.

A. O. SMITH CORPORATION · *Milwaukee, Wisconsin*
Oil Field Products Division Los Angeles

Oil Securities Irregular During Week

Drop in Mid-Continent Petroleum Issue Was Feature. Water Intrusion in Yates Pool, Pecos County, Factor

Twenty representative oil securities showed a gain for the week but the market was irregular. The sudden decline in Mid-Continent Petroleum Corp. featured the list. Following the omission of the current dividend, the issue sagged to a new low for 1927, and registered a drop of over $7 per share.

The appearance of salt water in the Yates Pool of Pecos County, Texas, caused a slight decline in the Transcontinental issue of both common and preferred.

At the meeting of the board of directors of the Consolidated Royalty Oil Co., held at Casper, Wyo., a dividend of 2 per cent was declared payable October 25 to stockholders of record of October 15, 1927. This is the fortieth consecutive quarterly dividend.

Oil Securities Lag

After watching railroad, motor, chemical, department store and many other groups of securities advance for a period of approximately three years, doubling and trebling their value, without any appreciable advance in oil securities, traders are coming to the conclusion that by the time the oil industry becomes truly prosperous, conditions in the securities market will not be in favor of an advance in stocks.

The present securities market has been so great in activity, without any real activity in oil stocks as a group, that some believe the market will play itself out before oils can come into their own.

However, there is one basic fact which must be taken into account before figuring the petroleum securities as out of the picture. This is that the oil industry is so great and important in the scheme of business that no securities market claiming to have any relationship with business can ignore it. For this reason many students of the market feel they would rather believe the oils will have to advance in mere recognition of the importance of the industry, than that the stock market can ignore the existence of the petroleum industry as a market factor.

The oil business is so interwoven with present day industrial and social activity that any permanent harm to the industry is bound to be reflected in other industries; it is not likely, therefore, that the oil industry will be allowed to drag down the industrial fabric of the nation to depression. Rather, it is more generally believed that the petroleum industry will add to the wealth of the nation by enjoying at least a moderate prosperity. This means that oil securities eventually should advance.

It is believed by many stock market experts that the oils were more generally held by the public at the beginning of the Coolidge boom market than any other group of securities. There has been a natural tendency during the boom for these holders to switch into other groups because of the lassitude, if not weakness, displayed by the oils.

Those that are holding their oil securities because of inherent faith in the industry and those who manage it, believe that the Coolidge market will have to spread to oil stocks in order to justify itself as a stock market directly related to industrial development.

Municipal Service Corp.

The Municipal Service Corp. (operating gasoline service stations), reports for the six months ended June 30, 1927, net profit of $260,103 after depreciation, interest, federal taxes, etc., equivalent after preferred dividends to 72 cents a share earned on 290,000 no par shares of common stock. This compares with $116,825 or 40 cents a share in the first half of 1926. July net profit was $115,008 after the above charges, against $36,203 in July, 1926.

The income account for the six months ended June 30, 1927, compares with the same period of 1926 as follows:

	1927	1926
Sales	$3,502,861	$2,981,447
Gross profit on sales	1,001,430	607,683
Total Income	1,048,928	660,413
Int., depr., taxes, etc	788,825	543,588
Net profit	$ 260,103	$ 116,825
Preferred dividends	50,000	.....
Surplus	$ 210,103	$ 116,825

Mid-Continent Petroleum

Mid-Continent Petroleum Corp. has omitted the quarterly dividend of 75 cents a share due on the common stock at this time.

Jacob France, president of the Mid-Continent Petroleum Corp., made the following statement: "The company is in strong financial position and it is the desire of the directors to keep it so. An oil company must at all times do a certain amount of expansion, otherwise it will not be able to hold its own with competitors. It must add to lease holdings, make extensions to its pipe line system, increase its service stations and make improvements necessary to keep its refinery modernized.

"The company has increased producing properties from 32,809 acres on March 31, 1925, to 39,637 acres on July 31, last, and its daily net production of crude oil from 13,385 bbls. for the year 1925, to 23,857 bbls. for the seven months ended July 31, 1927. Undeveloped acreage has been increased from 152,552 acres on March 31, 1925, to 478,392 acres on July 31, last. The pipe line system has been extended to the Seminole area and now comprises more than 1,385 miles of lines with necessary pumping stations and equipment. Tank and service stations have been increased from practically none in the spring of 1925 to the point where they provide an outlet for a substantial part of the company's refined products."

The Mid-Continent Petroleum Corp. is making application to the New York Stock Exchange for permission to list 56,000 additional common shares, which have been issued for the purchase of 360 tank and service stations, together with inventories, of the Hawkeye Oil Co., operating principally in Iowa, Indiana, Illinois, Kentucky and Minnesota. The company has heretofore been supplied by the Mid-Continent Petroleum Corp. and did a business of about 24,000,000 gallons annually.

It has not been decided whether to use all of the stock applied for in payment of the Hawkeye properties, or to use approximately 75 per cent of the stock and pay the balance in cash.

The statement of the Mid-Continent Petroleum Corp. and subsidiaries as of August 31, 1927, shows total assets of $86,325,484, comparing with $84,065,153 on December 31, 1926. Commenting on the balance sheet, Jacob France, president, states:

"During the first six months of this year inventory adjustments were made so that all products are now carried at present market or lower, as reflected in the balance sheet as of August 31, 1927.

"With the acquisition of the Hawkeye Oil Co., the company is now marketing, through its own stations or through subsidiaries, 50 per cent of its gasoline production. The company will not have to make any large capital expenditures in the near future. It is in strong financial position and is lending $2,000,000 on call.

"When conditions in the industry justify it, the dividend on the common stock will be resumed," he concludes.

The consolidated balance sheet of the Mid-Continent Petroleum Corp. and subsidiaries of August 31, 1927, compares with December 31, 1926, as follows:

Assets	Aug. 31, 1927	Dec. 31, 1926
*Oil reserves, refineries, etc.	$63,495,997	$56,466,739
Investments	721,663	541,767
Cash sinking fund	1,132	81,759
Mortgage bonds in treasury	.....	589,322
Cash	5,433,563	6,234,576
Call loans	2,000,000	4,000,000
Inventories	10,974,992	11,183,262
Notes and accounts receivable	2,363,263	3,607,042
Deferred charges	1,334,874	1,359,186
Total	$86,325,484	$84,065,153
Liabilities		
Preferred stock	$ 6,434,530	$ 6,434,530
**Common stock	40,877,947	40,877,948
Bonded debt	10,103,000	10,969,000
Subsid. stock called	.....	50,000
Accounts payable	1,277,236	1,910,476
Accrued interest, taxes, etc.	756,367	1,496,102
Deferred items	368,309	283,416
Surplus	26,508,095	22,043,629
Total	$86,325,484	$84,065,153

*After depreciation and depletion.
**Represented by 1,357,461 no par value shares.

Pan American Petroleum

The Pan American Petroleum & Transport Co. has declared a quarterly dividend of $1 on the common and Class B common stock, placing the issues on a $4 yearly basis, payable October 20 to stockholders of record September 30. The previous rate was $6 a share yearly, which had been in force since April, 1925. In 1922, the company paid $6 a share in cash and a 25 per cent stock dividend, while in 1923 the cash rate was increased to $8 a share annually with 20 per cent additional in stock. The rate was cut to $4 in April, 1924, and increased to $6 a year later.

The Mexican Petroleum Co., Ltd., declared a cash distribution of $75 a share on the common out of surplus. The regular quarterly dividends of $3 a share on the common and $2 on the preferred were also declared, all dividends payable October 20 to stockholders of record September 30.

The Pan American Petroleum & Transport Co. is the owner of 98.4 per cent of the common and preferred stocks of the Mexican Petroleum Co., Ltd., and consequently the payment to the public out of the $75 declaration amounts to about $585,000—the amount accruing to the Pan American company having already been taken up in intercompany accounts, according to a statement by the Pan American management.

Richfield Oil

The Richfield Oil Co. has declared the regular quarterly dividend of 25 cents a share on the common and 1¾ per cent on the preferred stock, both payable November 1 to stockholders of record October 5.

NEW YORK STOCK EXCHANGE—LIST OF ACTIVE STOCKS

Stocks—	Par	Clos. quot. Sept 26	Sept 19	1927 High	1927 Low	1926 High	1926 Low	1925 High	1925 Low
Amerada Corp.	..	31	29⅞	37½	27⅝	32⅞	24⅝	...	...
Atlantic Refining, com.	100	120¼	119	128½	107	128⅝	97	117½	95½
Barnsdall "A"	25	22½	23½	35½	20⅝	32½	23½	33½	18⅝
California Petroleum, com.	25	21⅝	21⅝	32⅞	21½	38¼	30⅞	34⅜	23⅜
Houston Oil	100	148¼	144⅞	173¼	60½	75	50¼	85	50
Independent Oil & Gas	..	20⅝	20⅞	32¾	17⅝	34	20¼	41¾	13½
Louisiana Oil	10	10⅝	10⅝	18¼	10⅜	19⅝	12	23⅜	13⅜
Maracaibo	..	13½	14¼	22⅜	13½	27⅝	18⅜	35½	20⅜
Marland	..	35¼	35⅞	58½	31	63⅜	41¼	60½	31⅝
Mid-Continent Petroleum	..	29	34¼	39⅝	29	41	25⅝	38	25¾
National Supply	50	84½	84⅝	95¾	76	84⅞	55½	71	54¾
Oil Well Supply	25	35¼	34½	44⅝	31¼	36	30	38	33⅜
Pan American, B	50	50⅞	50⅝	66⅝	45½	72⅝	56½	83⅞	59½
Pan American, Western B	..	19⅝	20⅛	37⅝	19¾	46	34	94⅜	37¼
Phillips Petroleum	..	42⅜	42¼	60¼	42¼	54⅞	42½	47½	37¼
Producers & Refiners	50	29⅜	25¾	33⅜	16¾	26	11	32⅝	12½
Pure Oil, com.	..	26½	26⅝	33⅛	26	31	25⅜	33⅜	22½
Royal Dutch, N. Y., sh.	13.40	46⅛	45½	54½	46½	57⅜	49⅜	57⅞	48¼
Shell Transport	10	43⅜	42¼	49	42¼	48⅞	42	49	30⅝
Shell Union, com.	..	25½	25⅝	31⅜	25⅛	30⅞	24	28⅝	21⅝
Simms Petroleum	10	17½	17	22⅜	14½	25⅝	16½	28½	18⅜
Sinclair Consolidated	..	17¼	17½	22⅜	16⅛	24⅞	16⅜	24⅞	17
Skelly Oil	25	26⅝	26½	37⅜	24¼	31⅛	27	32½	21¾
Standard of California	25	53⅞	53½	60¾	50⅜	63½	54	67¼	52½
Standard of New J. com.	25	39⅜	39⅛	41⅜	35⅞	46⅜	37½	47½	38⅜
Standard of New York	25	31½	31¼	34½	29⅞	47¼	30⅝	48⅝	40
Sun Oil Co.	.	31¼	31¼	34⅞	30	41⅝	30½	43⅞	38½
The Texas Company	25	51¼	50⅜	58	45	58	48	55	43¾
Texas Pacific Coal & Oil	10	14½	14⅜	18⅞	12	10½	12⅛	23⅜	11
Tide Water Associated Oil	..	17	16⅝	23½	15½	21	17	..	..
Transcontinental	..	7½	7⅝	8¾	3¾	5½	3	5⅝	3½
Union Oil of California	25	42⅝	43⅜	56⅜	39⅝	53⅜	37¼	43⅜	38½
Union Tank, com.	100	112	111	115	95	120⅜	84¼	‡134	118
White Eagle Oil & Refining	..	23	23½	27½	22	29⅜	25½	21⅜	25⅝
Standard Oils									
Anglo-American Oil	£1	18⅜	18½	21⅝	18⅜	19⅜	16½	26⅜	17½
Borne Scrymser	25	56	60	69	49½	75	65	‡240	205
Buckeye Pipe Line	50	57	56½	58	45	59½	42	72	63½
Chesebrough Manfg. Co.	25	107	108	108	76½	81½	63	74	99¼
Continental	10	18	18½	22⅝	16¾	25⅞	10¼	21½	21⅞
Cumberland Pipe Line	100	90	90	‡137	90	137	102	156	128
Eureka Pipe Line	100	56	54	66¼	47	53¾	43	96	61¼
Galena Signal, com.	100	7⅜	8	13½	7½	32½	9⅜	68½	23½
Humble Oil & Refining Co.	25	64¼	62⅜	64¼	54	99⅝	52	99	40⅜
Illinois Pipe Line	100	162	162	164¾	123¾	144	131	154½	124
Imperial Oil	..	61	53¼	61	37¾	39⅜	32½	39¼	27¼
Indiana Pipe Line	50	78½	70½	72½	61	68	52¼	84	80½
Intern. Petroleum Co.	10	33¼	30⅞	34⅞	28½	35¼	28⅜	26⅜	20¼
National Transit Co.	12.50	16	15¼	17½	13⅝	30⅜	27¼	25½	16½
New York Transit	100	34	34	36	31¼	61½	27¼	70	50
Northern Pipe Line	100	82	84	88	70	80½	64	88	67½
Ohio Oil Co.	25	60¼	60⅝	64¼	52	67⅜	55⅝	75¼	60
Penn-Mex Fuel	25	23½	22	31	12	24¼	15	44	19
Prairie Oil & Gas	25	52	51	55½	45⅝	60¼	49	65½	45⅞
Prairie Pipe Line	100	183½	183	185	132	137½	122½	129¾	105
Solar Refining Co.	100	180	182	‡201½	178	212	184½	159	200
South Penn Oil	25	37½	37	37½	31½	50	30	‡197	139
Southwest Pa. Line	100	71	68	77	55½	56	47½	84	50
Southern Pipe Line	50	21	18½	‡27¼	18½	27	24	‡103	63
Standard of Indiana	25	73⅝	73⅝	74¼	64¼	70½	60½	70⅝	69¼
Standard of Kansas	25	17¼	16⅝	20⅞	15⅝	36½	16½	46	30
Standard of Kentucky	25	122½	122⅞	123½	111⅝	134⅝	108	137	114⅝
Standard of Nebraska	25	44½	44¾	49½	45	51⅛	42	‡270	231
Standard of Ohio, com.	100	76	78	‡354	294	362	192½	369	338
Swan & Finch, com.	25	16½	16½	17	15	21	18	27	12
Vacuum Oil	25	128	127	134	95⅛	109⅜	84½	109½	80½
Miscellaneous									
Gulf Oil Corp. of Pa.	25	93	92¼	96½	86¼	95	82½	98⅛	63½

*Bid, no sales. ‡Old stock. †New stock.
Quotations furnished by W. J. Wollman & Co.

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange was as follows:

Sept. 26	61.30	Aug. 22	61.58	July 18	60.36
Sept. 19	60.83	Aug. 15	61.05	July 11	59.56
Sept. 12	61.20	Aug. 8	61.33	July 2	58.99
Sept. 5	60.60	Aug. 1	60.38	June 27	58.99
Aug. 29	60.41	July 25	60.55	June 20	60.46

Brief Items for Plant Operators

WESTERN REFINERS TO HOLD MEETING IN KANSAS

Under the sponsorship of the Western Petroleum Refiners Association, plant operators' meetings will be held at Eldorado, Kans., and Wichita, Kans., October 10 and 11. The meeting will be similar to that held in Wichita Falls, Tex., in the spring. The spring meeting was widely attended by Mid-Continent refiners and it is expected that the fall meeting will be equally interesting to those engaged in the operation of plants.

The program as announced by Howard Bennette, managing director of the association, provides for the presentation of prepared papers at the morning meetings. These papers will be followed by round-table discussions. The afternoons of the two days will be spent in visiting refineries located in Eldorado, Augusta, Potwin and Wichita, Kans. C. L. Henderson, vice president of the Vickers Petroleum Co., and chairman of the manufacturing committee of the association, is in charge of the meetings. Following is the program for the two days:

October 10 at 10 a. m.

Eldorado, Kans., Eldorado Hotel.

Discussion of Distillation and Fractionation, F. C. Koch, of Winkler & Koch.

"Practical Refinery Safety," Don J. Wallace, safety director, Mid-Continent Oil & Gas Association.

Luncheon at Eldorado Hotel.

Afternoon

Visiting refineries: Skelly Oil Co., Eldorado, Kans.; White Eagle Oil & Refining Co., Augusta, Kans.

October 11 at 10 a. m.

Wichita, Kans., Lassen Hotel.

"Automatic Process Controls," F. M. Poole, Brown Instrument Co.

"Fuel Economy in Refineries," P. W. Thomas, Combustion Equipment Co.

"Treating of Pressure Benzine," A. Henriksen, chief chemist, Marland Refining Co.

Luncheon at Lassen Hotel.

Afternoon

Visiting refineries: Derby Oil & Refining Co.; Barnsdall Refining Co.; Golden Rule Refining Co., all at Wichita, Kans., and Vickers Petroleum Co., Potwin, Kans.

SUGAR CREEK REFINERY LEADS SAFETY RECORD

The effectiveness of the safety contest being staged between the various refineries of the Standard Oil Co. of Indiana may be seen in the reports over the year to date. The Sugar Creek refinery has gone 109 days without a lost time accident and beats the Casper refinery's mark of 108 days previously established. The contest is being carried out on the basis of the number of full time employes at the respective plants and the results thus far are tabulated below.

Plant	No. of full time workers per month	Per Cent Lost Time
Laramie	66	.00
Sugar Creek	642	1.36
Whiting	3,493	1.41
Casper	1,144	1.48
Wood River	1,087	1.76
Greybull	136	2.14

PROGRESS ON SAGINAW PLANT

The Standard Oil Co. of Indiana has started construction work on practically all divisions of the new refinery to be located in Michigan, north of Saginaw. The stills and tankage are being erected first and with the work progressing as rapidly as at present, the company officials expect to have it completed by the end of November. The plant will operate on the crude produced in the Saginaw, Mich., field and will distribute its products locally so far as possible.

DISPOSAL OF PETROLEUM COKE NOW BEING DEVELOPED RAPIDLY

With the rapid development of the use of cracking, the production of petroleum coke increased faster than refinery sales organizations could be built up or new uses developed and in many cases the production had to be stored until the outlet could be developed. Since coke is a by-product it is not unnatural this condition should exist and as it does not deteriorate when held in storage the program can not be considered wasteful. The material has inherent properties that guarantee its value and the more extensive use of petroleum coke, both in the industries and household, is merely a matter of developing methods that will handle and burn it most economically.

The Marland Refining Co. has witnessed this situation and has carried on considerable research work at its refinery at Ponca City with respect to the best method of burning it, and H. G. Osborn, assistant superintendent of the Marland refinery there, has outlined the handling of the coke as it is done now, in preparing it for shipment and use. Mr. Osborn's discussion follows:

One of the by-products formerly of very little value to the refiner, but at present of some importance, is petroleum coke. Referring to former articles on the operation of the Marland refinery it was pointed out that in the production of gasoline from heavy oils such as gas oil and fuel oil, there was formed petroleum coke. This is true in all cracking processes in varying degrees. For example, our Fleming pressure stills produce per day approximately 3 tons of coke, our Cross stills 2 tons and our Dubbs stills 225 tons, or a total of some 230 tons.

The disposal problem alone in connection with this coke is a large one. It must be removed from the immediate vicinity of the stills, stored and later marketed. For the purpose of removal Marland company has installed approximately one-half mile of industrial railroad, operates two locomotives and about 12 coke cars. The coke is collected by means of conveyors from various points where it is produced, and hauled to a storage area south of the refinery. Before reaching the storage ground the trains climb a trestle until they are approximately 20 feet above the ground. The cars are opened and the coke dumped onto the ground.

Petroleum coke finds extensive use in two different fields, i.e., power plant consumption and domestic use. In the first instance the coke can be burned in either of two ways: (1) pulverized to a maximum size of approximately one-fourth inch, in which condition it is fed by the use of compressed air or steam as a fine dust into boilers where combustion takes place; (2) in lump form on chain grate stokers. The stokers are simply continuous chains, operating similarly to the track of a tractor or tank. The coke fed onto the chain grate is moved slowly from the front to the rear of the boiler, during which time combustion takes place, and, by the time the chain turns under and begins its return circuit, combustion is complete and the ashes fall below the boiler.

The domestic uses of coke, either in fire boxes, stoves or furnaces of one type or another, are familiar to all of us.

At the present time Marland company has contracts for some 30,000 tons of coke for industrial uses in power plants. It is important that this coke be absolutely free from any foreign matter, such as dirt, iron, brickbats, etc. In order to accomplish this end considerable money has been expended on the installation of electro magnetic pulleys. The coke is loaded by a crane equipped with a clam-shell bucket into a hopper, which assures the even flow of the coke over the conveying belt. The pulley at the end of this conveyor, over which the belt travels, is connected with an electric generator sufficiently powerful to create a magnetic field even through the belt and a fairly thick coke bed. In this way any iron in the coke, on passing over the pulley, is abstracted and clings to the belt until it passes back out of the magnetic field, when it drops off. From this first conveyor the coke falls into a rotary screen approximately 3 inches in diameter and 15 inches long, set on a slight slope. This screen is simply a cylinder, the sides of which are perforated with various sized holes. It revolves slowly and the coke up to 2½ inches falls through the orifices into a hopper, which feeds it automatically onto a second conveyor. This conveyor is equipped with an electro magnetic pulley similar to that previously described, and assures the extraction from the coke of any iron which may possibly have escaped the first magnetic field. This conveyor discharges the coke directly into the standard railroad cars.

Retracing our steps a moment, the coke which entered this screen and was too large to pass through the perforations, runs out the open end in the form of lump coke into storage provided. This is the coke utilized for domestic fuel. It is periodically loaded with the crane into cars.

A comparison of the heating value of

(Continued on Page 179)

AMONG THE TECHNICAL MEN

Dr. J. Bennett Hill, chief chemist for the Atlantic Petroleum Company, was recently made chairman of the Petroleum Division of the American Chemical Society, one of the largest divisions of the society from the standpoint of members. He succeeds R. R. Matthews of the Roxana Petroleum Corp., who has held the chairmanship of the division since its organization. Doctor Hill has been active in the work of the society for many years and served as president of the Philadelphia section during 1926-27. During the convention of the society in Detroit, at which time he was made chairman, he read a very interesting paper showing the relation of the viscosity of petroleum oils and their gravities. Doctor Hill has had a wealth of technical training and experience beginning in 1909 when he entered the University of Pennsylvania. He specialized in chemistry, graduating in that course in 1913. He then continued his work at the University of Pennsylvania for three years, and received his degree of Doctor of Philosophy in 1916.

Dr. J. Bennett Hill

Entering the employ of the Barrett Co., of Frankfort Pa., manufacturers of asphalt roofing and materials, he carried on research work and control tests. He was made research chemist and then laboratory manager in charge of all research and control work. He continued in this work until 1924, but during 1922-23, was retained by the National Association of Dyers and Cleaners as research chemist. This work supplied a diversity of problems.

After leaving the employ of the Barrett Co. in 1924, he joined the Technical Department of the Atlantic Refining Company as chief chemist, the position he now holds. The diversity of the company's activities calls for the solution of many problems to be made in the laboratory. The laboratories of the company are well known for their completeness of equipment and efficiency. Doctor Hill was born in Philadelphia, Pa., on October 3, 1891.

GIRARD POINT PLANT TO OPERATE OCTOBER 1

NEW YORK, Sept. 26.—The Girard Point refinery of the Gulf Refining Co., near Philadelphia, Pa., has been completed and will begin to operate about October 1 on Venezuelan crude oil, the first cargo of which has been unloaded at the terminal. The plant, which is in charge of L. R. Jones, has a rated capacity of 20,000 bbls. daily and is a skimming plant.

The Gulf Refining Co. now has total refining capacity on the Atlantic seaboard of 40,000 bbls. daily, comprising the Girard Point plant and the Bayonne, N. J. plant, each rated at 20,000 bbls. daily.

The refinery sites both at Bayonne and Girard Point are large enough to support much larger plants, and it is expected that ultimately present refineries will be enlarged and cracking equipment installed, although no definite plans for expansion have yet been decided upon. The Gulf Refining Co. will build up a large capacity on the Atlantic Coast, it is believed, based on the greater economy of transporting crude to the Atlantic seaboard than refined products.

If the Gulf company decides to build a third refinery on the Atlantic Coast, Beverly, Mass., near Boston, is talked of as a possible site. The company has a large terminal at that place.

The illustration shows Getty Gasoline Company's new gasoline plant, containing four Cooper Type-80 single gas engines in the Long Beach, California, field.

Getty Gasoline Chose Coopers

This is another example of where the purchaser believes that the best machinery obtainable always proves cheapest in the long run.

For ninety-four years Cooper engines have enjoyed the distinction of being selected by those who are never satisfied with anything less than the best.

The C. & G. Cooper Co.
Mt. Vernon, Ohio
Dallas Los Angeles Tulsa

FURTHER WEAKENING IN EASTERN MARKET

(Continued from Page 171)

Meanwhile it will be run in Mexican Eagle's Tuxpam, Mexico, refinery.

As is generally known, large oil tankers cannot enter Lake Maracaibo because of the existence of a 10-foot bar, consequently oil must be loaded into small boats and transferred to large tankers at deep water ports outside of Lake Maracaibo.

Mexican Eagle Oil Co. is said to have shipped 20,000 tons of material to build its terminal at Aruba, and that the company will build there for storage purposes twenty-three 75,000-bbl. tanks. The Lago Oil & Transport Co. is now transhipping at the port of San Nicholas on the Island of Aruba some 35,000 bbls. of oil a day. The Dutch-Shell combine located its terminal some years ago in Curacao. It was recently stated that the latter company has appropriated 20,000,000 guilders for further improvements, in addition to the $25,000,000 it has already spent in the port of Willemstad in Curacao.

Petroleum Receipts

The following table shows estimated daily average receipts of crude and refined oil by water at Atlantic Coast ports for the last three weeks; also monthly record for the past 12 months (figures in barrels):

	Week Ended		
	Sept. 21	Sept. 14	Sept. 7
Gulf Coast	368,000	248,000	428,000
Pacific Coast	78,000	84,000	123,000
Mexico	87,000	66,000	46,000
South America	153,000	81,000	55,000
Total	686,000	479,000	652,000

Daily Averages by Months

	Gulf	Pacific	Mex.	S. Am.	Total
1927:					
Aug.	397,000	90,000	80,000	78,000	645,000
July	406,000	83,000	78,000	49,000	616,000
June	378,000	118,000	68,000	47,000	611,000
May	332,000	58,000	91,000	53,000	534,000
April	388,000	93,000	69,000	61,000	611,000
Mar.	345,000	103,000	36,000	81,000	565,000
Feb.	379,000	89,000	40,000	48,000	556,000
Jan.	362,000	73,000	49,000	61,000	545,000
1926:					
Dec.	363,000	57,000	49,000	61,000	530,000
Nov.	335,000	62,000	56,000	40,000	493,000
Oct.	270,000	71,000	61,000	43,000	445,000
Sept.	299,000	98,000	63,000	58,000	518,000

The foregoing figures are based on the carrying capacity of incoming oil-laden tankers.

WEEK OPENS QUIETLY IN CHICAGO MARKET

(Continued from Page 170)

week, just the regular grist of orders from customers and prices showed practically no change beyond a firmer feeling. Several refiners state they are sold up or have nothing to sell which may mean they have some stocks but are waiting for better prices which they expect to come later. The gas companies have been buying in the market to some extent but the larger ones are supplied and the bulk of the business last week came from the smaller concerns. In several states there are what are practically co-operative buying organizations which buy for the companies over a considerable district and these are quite frequently in the market when the prices are attractive. The gas companies are supposedly unwilling to pay more than 2½ cents for U. G. I. specifications gas oil but this price has been at their command during the past two weeks and if they have bought extensively it has been very quietly done and directly, not through the usual channels. The movement to the gas plants has been very largely on contract.

There is a good inquiry for gas oil for domestic oil burners and the supply at present is, judging by the known supplies, barely adequate. There is little information available as to possible production and stocks but the outlook is at present for a rather strong demand and probably somewhat limited supply. A recent compilation of domestic oil burners lists the grade of oil suitable for the use of 54 different makes of burners and none of these recommend the use of an oil with a gravity of less than 28 degrees. The chief difference in the 28-30 gas oil and the same gravity of fuel oil is on the flash which for a domestic burner must not be over 220 degrees. The demand from the industrial companies who want a gas oil simply as a light gravity fuel oil is better than it has been but buying is chiefly for present needs although some concerns have filled their tanks with a supply that will last them for several months. The product is now largely classified by buyers into three grades, the straightrun gas oil with a cold test which is rather high cold test for winter use; a cracked gas oil, zero cold test, dark in color and having a flash of 220 or better and the straw gas oil with a zero cold test and a flash of 190-200 or better. The price range for all three grades is between 2½ and 3 cents in the spot market.

Fuel Oil

Fuel oil continues to move for the present needs of the industries using it and on the whole their requirements are about the same as during previous seasons. There has been some falling off in some industries and others are buying more.

Last week the writer was in one office when a couple of cars of 24-26 fuel oil were sold at 90 cents and in another when an offer of 79 cents on the same gravity did not secure the order. The question arose as to why did one buyer pay with little objection 90 cents and another refuse to pay 79 cents for the same oil apparently. The reason was in the quality of the oil. By comparison of viscosity, flash and burning point, absence of free carbon and other impurities, the 90-cent oil was really a better buy than the 79-cent oil. Some of the concerns are now giving a great deal of attention to the quality of the oil for they claim that in regularity of operation, time saved and uniformity of product, the use of a good grade of oil is a saving rather than an excessive cost. Some refiners are building a reputation for shipping good oil and the product of other refiners is being discriminated against by careful buyers.

There has been some dumping of the heavy gravities of fuel oil from the cracking plants of some of the local and nearby refiners. Some of this oil is below 14 gravity. Some of it has about 3 per cent sulphur. This oil is best used in the warmer weather and the refiners of it have been selling it at some concessions to reduce their stocks. Otherwise the market is unchanged. It seemed that the bulk of the inquirers were quoted 80 cents for any gravity last week. Some sellers held for 85 cents for a good 24-26 oil but others offered their product at 80 cents and would supply anything from a 16-18 to 24-26 gravity at that price. There was no large business placed. Just hand-to-mouth orders or for over the month. Refiners were unwilling to quote over periods or asked material increases in prices over the winter but for immediate shipments there was little change except where keen competition for business brought lower quotations.

Lubs Active

Lubricating oils in car lots have been fairly active. Good sales are reported by a number of refiners and marketers for motor oils, bright stocks, paraffin oils. Prices were not quite as satisfactory as sales according to several. The distributing business has been good, not as active as gasoline the jobbers say, but a good business. The industrial demand is just about fair. Nothing special to mention but a steady run of orders for the special oils used in the various industries.

The first half of September was one of the most active with distributors that they have had this season. Gasoline sales were large, kerosene was moving in the country, furnace oils dragged on account of the weather. After the middle of the month chilly nights and days brought about the filling of the tanks with the initial delivery of the season and there was a lot of furnace oil of various grades distributed. The business is still active but it is thought there may be some let-up when the majority of the tanks have been filled as the consumption will be at a low rate during October and possibly November. With December the heavier consumption will begin. Of course, much depends on the weather. It will not be until December in the usual course that the domestic oil burners will begin their all-day operation.

There have been quite a number of price cuts over the territory and in Indiana a large part of the northern half of the State is selling gasoline to the public at much less than normal prices. The public may think that the oil men are absorbing the tax. No immediate change is looked for in the scale over the territory. There are many reports that a general change and possibly a drastic one, as it will include the discounts as well as the prices, may be expected early in October. There is absolutely no confirmation of this to be had. On the contrary, explicit denials have been made at times not to one but to several inquirers.

ROCKY MOUNTAIN AREA

(Continued from Page 161)

have not yet been put on 24-hour operation, but the two are making about 60 or 65 bbls. Two more wells are nearing completion, the Brittain DeSchon well in Section 34-26-1 and the Elliott well in Section 1-25-1. The latter well reports a total depth of over 1,200 feet, but is held up by a fishing job. The O'Neil well in Section 36-26-2, 6 miles or more from the Bannatyne discovery well, was abandoned at 1,720 feet after finding the Ellis-Madison contact dry, and the lower strata carrying sulphur water. A well has been spudded in the Bannatyne Field by the Golfers Syndicate, location 34-26-1. Nine locations have now been made in the field.

Pondera Structure

The Big West Oil Co. is moving in material for a well on the Pondera structure where there are now two wells drilling and several rigs up. The Whiteside Syndicate is drilling in Section 5-27-3 and S. C. Ferdig has spudded in Section 8-27-4.

The Adams Oil Co. abandoned a wildcat test in Section 17-29-2, not far from Pondera. The Sunburst sand was dry at 1,975 feet, and the next sand carried a heavy dose of water.

In spite of the fact that winter is near at hand, there is a great deal of work being done in the wildcat districts in Montana. This work has been greatly stimulated by discoveries in the Pondera, Bannatyne and Bear's Den areas the past spring and summer, though the new tests are widely scattered, and if carried to completion, will prove up many miles of territory in Montana.

ROCKY MOUNTAIN PRODUCTION
Runs From the Fields

Wyoming	
Salt Creek	32,740
Teapot	880
Big Muddy	2,900
Grass Creek	2,480
Elk Basin	1,080
Greybull	20
Dutton Creek	20
Notches	200
Rock River	2,830
Rex Lake	160
Lance Creek	680
LaBarge	480
Mule Creek	730
Poison Spider	870
Hamilton	1,220
Osage	330
Lander	650
Pilot Butte	640
Ferris	70
Byron	60
Lost Soldier	2,680
Simpson Ridge	90
Montana	
Cat Creek	2,040
Lake Basin	230
Kevin Sunburst	11,500
Colorado	
Florence	982
Moffat	1,665
Fort Collins	2,795
Walden	105
Iles Dome	460
Rangely	100
Tow Creek	689
Boulder	25
New Mexico	
Rattlesnake	139
Hogback	420
Cap Rock	104
Artesia	1,324
Table Mesa	123
Total	74,511

OVERCOMPETITION IS OIL INDUSTRY'S BANE

(Continued from Page 25)

At every turn "co-operation" is urged; co-operation in producing, in refining, in distributing.

But in business, "co-operation" means combination. It is impossible to change a fact with a change of words. "Conservation" and "co-operation," are the words most used in seeking for the solution of the overproduction of oil. Conservation in the last analysis means taking out only sufficient oil for the daily needs of the industry. And to secure that end "co-operation" is urged.

During all the time that the industry has grown up, it has never had a chance to "co-operate." For combinations are forbidden by law. Effective co-operation must be on a business basis. Certainly the magnitude of the capital investment in the industry; the number of stockholders, and the danger of too much meddling in business demands that the oil industry be given an opportunity to work out its own problems.

Secretary Work very truly says that there is already too much law. But the overproduction of law is not only in the regulatory measures, but in the basic law of business, which compels the very over-competition, that is now denounced."

DISPOSAL OF PETROLEUM COKE DEVELOPED RAPIDLY

(Continued from Page 177)

coke with some better known products may be of interest.

Character of fuel:	Volatile Matter	Ash	Heat Val. B.t.u.
Anthracite coal	6.21	15.5	14,900
Bituminous coal, Pa.	36.42	5.93	14,947
Petroleum coke	12.66	0.62	15,864

From the above table it will be seen that petroleum coke is a very desirable fuel. Marland company has in storage at present some 30,000 tons, is producing between 220 and 230 tons per day and shipping between 400 and 450 tons a day, in addition to burning considerable amounts under its own boilers.

Some interesting points in connection with petroleum coke have been developed recently by several research laboratories connected with state universities. One chemist has determined definitely that petroleum coke contains in varying amounts the following metals: Vanadium, tin, lead, cobalt, gold, uraniumand silver. One scientist even goes so far as to believe that the combined value of these metals may very possibly be such as to make their extraction commercially feasible.

CALIFORNIA PRODUCTS TO FISHER GOVERNOR CO.

The Campbell duplex tank vapor control and the new "Presorvac" relief valve, now manufactured at Long Beach, Calif., have been taken over by the Fisher Governor Co., and will be manufactured at its Marshalltown, Iowa, factory. They will be distributed by the Smith Separator Co.

The Campbell products, well known on the west coast, are new in the Mid-Continent Field. The Fisher Governor Co. has been manufacturers of oil field specialties since 1880. It is understood the production of Campbell units will commence as soon as adequate facilities for their manufacture can be installed at the Marshalltown plant of the Fisher company.

Campbell engineers have devoted much attention to the control and recovery of gasoline vapors at tank farms and refineries. The Campbell oil-froth absorber, used in the production of natural gasoline, is manufactured by their inventor, J. A. Campbell, and will not be taken over by the Fisher company.

KANSAS MAY DOUBLE TAX ON GASOLINE

The Kansas Highway Commission will recommend the adoption of a 4-cent gasoline tax to replace the present one of 2 cents to hasten the concrete road program within the State. The commission will use the money to pave the many short stretches of road left unsurfaced in order to connect a continuous network of pavement. At present, the state highway commission receives about $1,600,000 a year, the balance of the money going to the counties for road use.

REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

GASOLINE AND NAPHTHA

	Sept. 27		Sept. 20		Sept. 13	
OKLAHOMA (Group 3)—						
50-52 450 endpoint (Naphtha)	.06		.06		.06	
56-58 450 endpoint	.06		.06		.06	
58-60 450 endpoint	.06		.06		.05⅞	.06
58-60 437 endpoint (U. S. Motor)	.06⅛	.06¼	.06⅛	.06¼	.06	.06¼
60-62 400 end point	.06⅝		.06½	.06⅝	.06½	
64-66 375 endpoint	.06⅞	.07	.06⅞	.07	.06¾	
68-70 360 endpoint	.07	.07⅛	.07	.07¼	.06¾	.07
64-66 437 endpoint (blend)	.06⅛	.06¼	.06⅛		.06	.06¼
KANSAS—						
58-60 437 endpoint (U. S. Motor)	.06⅜	.06⅝	.06⅜	.06⅝	.06¼	.06½
NORTH TEXAS—						
56-58 437 endpoint	.05⅞		.05⅞		.05¾	.05⅞
58-60 450 endpoint	.05¾	.05⅞	.05¾	.05⅞	.05¾	
58-60 437 endpoint (U. S. Motor)	.06	.06⅛	.06	.06⅛	.05⅞	.06
60-62 400 endpoint	.06¼	.06⅝	.06¼	.06⅝	.06¼	
64-66 390 endpoint	.06⅝	.06¾	.06⅝	.06¾	.06⅝	
64-66 375 endpoint	.06¾		.06¾		.06½	
68-70 360 endpoint	.07		.07		.06¾	.07
64-66 437 endpoint (blend)	.06	.06⅛	.06	.06⅛	.05⅞	
NORTH LOUISIANA—						
58-60 437 endpoint (U. S. Motor)	.06⅜	.06½	.06⅜	.06½	.06¼	.06½
ARKANSAS—						
58-60 437 endpoint (U. S. Motor)	.06½	.06¾	.06½	.06¾	.06¼	.06½
PENNSYLVANIA—						
52-54 Naphtha	.07¾	.08	.07¾	.08	.07¾	.08
54-56 Naphtha	.08	.08¼	.08	.08¼	.08	.08¼
58-60 Gasoline	.08	.08¼	.08	.08¼	.08	.08¼
60 Gasoline	.08¾	.09	.08¾	.09	.08¾	.09
62 Gasoline	.09¼	.09⅝	.09¼	.09⅝	.08¾	.09
64 Gasoline	.09½	.09¾	.09½	.09¾	.08⅞	.09
CALIFORNIA—						
58-60 437 endpoint (U. S. Motor) domestic	.08½	.09	.08½	.09	.08¾	.09¼
CHICAGO DISTRICT (Based on Group 3)—						
50-52 450 endpoint (Naphtha)	.06		.06	.06⅛	.06	.06⅛
56-58 450 endpoint	.06	.06⅛	.06	.06⅛	.06	.06⅛
58-60 437 endpoint (U. S. Motor)	.06¼		.06⅛	.06¼	.06⅛	.06¼
60-62 400 endpoint	.06⅝	.06¾	.06½		.06½	.06⅝
64-66 375 endpoint	.06⅞	.07	.06¾	.07	.06⅞	.07
68-70 360 endpoint	.07¼	.07½	.07⅛	.07¾	.07¼	.07½
64-66 437 endpoint (blend)	.06⅜	.06½	.06¼		.06⅛	.06⅜

NATURAL GASOLINE

	Sept. 27		Sept. 20		Sept. 13	
OKLAHOMA (Group 3)—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.06	.06¼	.06	.06¼	.05½	.05¾
Grade AA, 80-87.9, 375 e.p., rec. 90%	.06		.06	.06¼	.05½	
Grade B, 76-83.9, 375 e.p., rec. 85%	.05⅝		.05⅝		.05½	
Grade BB, 84-92, 375 e.p., rec. 85%	.05⅝		.05⅝		.05¼	
Grade C, 80-90, 375 e.p., rec. 78%	.05½		.05½	.05⅝	.05	.05¼
NORTH TEXAS—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.06		.06		.05½	
Grade AA, 80-87.9, 375 e.p., rec. 90%	.06		.06		.05½	
Grade B, 76-83.9, 375 e.p., rec. 85%	.05½		.05½		.05¼	.05⅝
Grade BB, 84-92, 375 e.p., rec. 85%	.05½		.05½		.05¼	
Grade C, 80-90, 375 e.p., rec. 78%	.05⅝	.05½	.05⅝	.05½	.05	
NORTH LOUISIANA—						
Grade AA, 80-87, 375 e.p., rec. 90%	.06¼		.06¼		.05¾	
Grade BB, 84-92, 375 e.p., rec. 85%	.05¾		.05¼		.05½	
Grade C, 80-90, 375 e.p., rec. 78%	.05¾		.05¼		.05¼	.05½
CALIFORNIA—						
75-85, 375, 390 endpoint	.07	.07½	.07	.07½	.07½	.09
CHICAGO DISTRICT (Based on Group 3)—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.06	.06¼	.06	.06¼	.05½	.05¾
Grade AA, 80-87.9, 375 e.p., rec. 90%	.06	.06¼	.06	.06¼	.05½	
Grade B, 76-83.9, 375 e.p., rec. 85%	.05⅝		.05⅝		.05¼	.05⅜
Grade BB, 84-92, 375 e.p., rec. 85%	.05⅝		.05⅜		.05¼	
Grade C, 80-90, 375 e.p., rec. 78%	.05⅝		.05⅝		.05	.05¼

BURNING OIL

	Sept. 27		Sept. 20		Sept. 13	
KANSAS—						
41-43 water white Kerosene	.04⅝	.04½	.04⅝	.04½	.04⅝	.04½
OKLAHOMA (Group 3)—						
41-43 water white Kerosene	.04¼	.04½	.04¼	.04⅜	.04⅛	.04⅜
42-44 water white Kerosene	.04½	.04¾	.04⅜	.04½	.04⅜	.04½
NORTH LOUISIANA—						
41-43 prime white Kerosene	.04½		.04⅜	.04½	.04¼	.04½
NORTH TEXAS—						
41-43 water white Kerosene	.03⅝	.03¾	.03⅝	.03¾	.03⅝	.03¾
40-42 water white Kerosene	.03½	.03⅝	.03½	.03⅝	.03½	.03⅝
ARKANSAS—						
41-43 water white Kerosene	.04	.04¼	.04	.04¼	.04	.04¼
PENNSYLVANIA—						
43 Kerosene prime white	.06	.06¼	.05⅝	.05⅞	.05⅝	.05⅞
45 Kerosene water white	.06¼	.06½	.06	.06¼	.05¾	.06
46 Kerosene water white	.06¾	.07	.06¼	.06½	.06¼	.06½
47 Kerosene water white	.07	.07¼	.06¾	.07	.06½	.06¾
300 Mineral Seal	.07	.07¼	.07	.07¼	.06¾	.07
CALIFORNIA—						
38-40 water white Kero. (high burning test)	.05	.05½	.05	.05½	.05	.05½
Engine distillate, 43-45 445 endpoint	.08	.08½	.08	.08½	.08	.08½
Engine distillate, 42-44 480 endpoint	.07¾	.08	.07¾	.08	.07¾	.08
CHICAGO DISTRICT (Based on Group 3)—						
41-43 water white Kerosene	.04¼	.04⅜	.04⅛	.04¼	.04⅛	.04¼
42-44 water white Kerosene	.04⅝	.04¾	.04½	.04⅝	.04⅜	.04½

FUEL OILS

	Sept. 27		Sept. 20		Sept. 13	
KANSAS—						
22-26 Fuel Oil	.85	.92½	.85	.92½	.87½	.95
18-22 Fuel Oil	.82½	.85	.82½	.85	.82½	.85
32-36 Gas Oil	.02⅝		.02⅝		.02⅝	
38-40 Distillate	.03⅛	.03¼	.03⅛	.03¼	.03⅛	.03¼
OKLAHOMA (Group 3)—						
Below 18 Fuel Oil	.75	.80	.75	.80	.77½	.80
18-22 Fuel Oil	.80		.80		.80	
22-26 Fuel Oil	.80	.82½	.80	.82½	.80	.82½
24-26 Fuel Oil	.82½	.85	.82½	.85	.82½	.85
26-30 Fuel Oil	.87½		.87½		.87½	
28-30 Fuel Oil	.92½		.92½		.92½	
32-36 Gas Oil (dark)	.02½		.02½		.02½	
32-36 Gas Oil (straw overhead)	.02⅝		.02⅝		.02⅝	
36-38 Distillate	.03		.03		.03	
38-40 Straw Distillate	.03⅛	.03¼	.03⅛	.03¼	.03⅛	.03¼
NORTH TEXAS—						
24-26 Fuel Oil (sellers' cars)	.80	.82½	.80	.82½	.80	.82½
32-36 Gas Oil (straw)	.02¼	.02½	.02¼	.02½	.02¼	.02½
38-40 Straw Distillate	.03		.03		.03	
NORTH LOUISIANA—						
18-20 Fuel Oil	1.10		1.10		1.10	1.12½
32-36 Gas Oil	.02¾		.02¾		.02¾	.02⅞
ARKANSAS—						
36-38 Distillate	.03¼	.03½	.03¼	.03½	.03¼	.03½
32-36 Gas Oil (straw)	.03¼		.03¼		.03¼	
16-20 Refinery Fuel Oil	1.00	1.05	1.00	1.05	1.00	1.05
GULF COAST (South Texas)—						
Gas Oil	.04		.04		.04	
Fuel Oil	1.60	1.65	1.60	1.65	1.60	1.65
PENNSYLVANIA—						
30-34 Fuel Oil	.04¼	.04½	.04¼	.04½	.03¾	.04¼
36-40 Fuel Oil	.04½	.04¾	.04½	.04¾	.04	.04½
CALIFORNIA—						
33-36 Distillate	.03¾	.04	.03¾	.04	.03¾	.04
27-32 Distillate	.03¼	.03¾	.03¼	.03¾	.03¼	.03¾
*15-20 Fuel Oil, Bunkers (at tide water)	1.00		1.00		1.00	
15-20 Fuel Oil (cargo lots)	.90		.90		.90	
27 plus Diesel	1.15	1.19	1.15	1.19	1.15	1.19
CHICAGO DISTRICT (Based on Group 3)—						
24-26 Fuel Oil (sellers' cars) Group 3	.82½	.85	.85	.87½	.85	.87½
22-26 Fuel Oil (sellers' cars) Group 3	.80	.82½	.82½	.85	.82½	.85
18-22 (Group 3)	.77½	.80	.77½	.80	.77½	.80
16-20 Smackover	1.05	1.07½	.110	1.12½	1.10	1.15
32-36 Gas Oil (zero)	.02⅝	.02⅞	.02¾	.03	.02¾	.03
32-36 Gas Oil (industrial)	.02½	.02⅝	.02½	.02⅝	.02⅝	
36-38 Distillate	.03		.03		.03	
38-40 Straw Distillate	.03⅛	.03¼	.03¼		.03⅛	.03¼

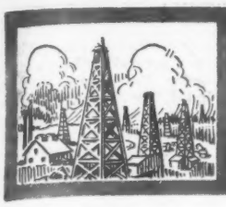
*Bunkers.

LUBRICATING OIL AND WAX

	Sept. 27		Sept. 20		Sept. 13	
OKLAHOMA (Group 3)—						
100 vis., 2 color, 20-25 cold test	.06¼	.06½	.06¼	.06½	.06¼	.06½
100 vis., 3 color, 20-25 cold test	.06	.06¼	.06	.06¼	.06	.06¼
150 vis., 3 color, 20-25 cold test	.08¼	.08½	.08¼	.08½	.08¼	.08½
150 vis., 4 color, 20-25 cold test	.08	.08¼	.08	.08¼	.08	.08¼
180 vis., 3 color, 23-28 cold test	.09¾	.10	.09¾	.10	.09¾	.10
180 vis., 4 color, 23-28 cold test	.09½	.09¾	.09½	.09¾	.09½	.09¾
180 vis., 5 color, 23-28 cold test	.09¼	.09½	.09¼	.09½	.09¼	.09½
200 vis., 3 color, 23-28 cold test	.10	.10½	.10	.10½	.10	.10½
200 vis., 4 color, 23-28 cold test	.10⅛	.10⅝	.10⅛	.10⅝	.10⅛	.10⅝
200 vis., 5 color, 23-28 cold test	.10¼	.10½	.10¼	.10½	.10¼	.10½
240 vis., 3 color, 25-30 cold test	.13¾	.14	.13¾	.14	.13¾	.14
240 vis., 4 color, 25-30 cold test	.13¼	.13½	.13¼	.13½	.13¼	.13½
240 vis., 5 color, 25-30 cold test	.12¼	.12½	.12¼	.12½	.12¼	.12½
280 vis., 3 color, 25-30 cold test	.15½	.16	.15½	.16	.15½	.16
280 vis., 4 color, 25-30 cold test	.15	.15½	.15	.15½	.15	.15½
280 vis., 5 color, 25-30 cold test	.14	.14½	.14	.14½	.14	.14½
Cylinder Stocks:						
600, steam refined, light green	.07	.09	.07	.09	.07	.09
600, steam refined, dark green	.05	.06	.05	.06	.05	.06
190-200 vis. @ 210 Bright Stock	.31	.33	.31	.33	.31	.33
150-160 vis. @ 210 Bright Stock	.26		.26		.26	
Waxes:						
124-126 White Crude Scale Wax	.02¾		.02⅝		.02⅜	.02⅝
PENNSYLVANIA—						
34 Neutral	.07½	.08	.07½	.08	.07½	.08
34 Sundebloom	.08¾	.09	.03¾	.09	.08¾	.09
36 Miners' Neutral	.07½	.07¾	.07½	.07¾	.07½	.07¾
150, 3 color	.27½	.28	.28	.28½	.28	.28½
180, 3 color	.31	.31½	.32¼	.32½	.32¼	.32½
200, 3 color	.33¾	.34	.34	.34¼	.34	.34¼
220, 3 color	.36	.36½	.36	.36½	.36	.36½
600, steam refined	.09½	.10	.09½	.10	.09½	.10
635, steam refined	.10½	.11	.10½	.11	.10½	.11
650, steam refined	.11½	.12	.11½	.12	.11½	.12
600, Pennsylvania flash	.15	.15½	.15	.15½	.15	.15½
*550, E filtered	.17¼	.18	.17¼	.18	.17¼	.18
*600, E filtered	.18½	.19	.18½	.19	.18½	.19
600, E filtered	.16½	.17	.16½	.17	.16½	.17
600, D filtered	.25½	.26	.25½	.26	.25½	.26
550, E filtered	.17½	.18	.17½	.18	.17½	.18
550, D filtered	.21½	.22	.21½	.22	.21½	.22
Pennsylvania Bright Stock	.33	.34	.33½	.35½	.33½	.35½
†122-124 White Crude Scale Wax	.03	.03¼	.03	.03¼	.03	.03¼
†124-126 White Crude Scale Wax	.03	.03¼	.03	.03¼	.03	.03¼

*At Warren, Pa. †At New York City.

GULF COAST (South Texas)—						
No. 2 color, 100 vis., pale oil	.07	.07½	.07	.07½	.07	.07½
No. 3 color, 200 vis., pale oil	.09½	.10	.09½	.10	.09	.09½
No. 3 color, 300 vis., pale oil	.10½	.11½	.10½	.11½	.10	.10½
No. 3½ color, 500 vis., pale oil	.12½	.13	.12½	.13	.11½	.12
No. 4 color, 750 vis., pale oil	.15½	.16	.15½	.16	.14½	.15½
No. 5 to 6 color, 200 vis., red oil	.08	.08½	.08	.08½	.07¼	.07¾
No. 5 to 6 color, 300 vis., red oil	.09½	.10	.09½	.10	.09	.09½
No. 5 to 6 color, 500 vis., red oil	.10½	.11	.10½	.11	.10	.10½
No. 5 to 6 color, 750 vis., red oil	.13½	.14	.13½	.14	.13	.13½
No. 2 color, 200 vis., pale filtered	.12¾	.14	.12¾	.14	.12¾	.14
No. 2 color, 300 vis., pale filtered	.14	.14½	.14	.14½	.14	.14½
No. 2½ color, 500 vis., pale filtered	.15½	.16½	.15½	.16½	.15½	.16½
No. 2½ color, 750 vis., pale filtered	.20	.20½	.20	.20½	.20	.20½
CALIFORNIA—						
130 vis., 2½-3 color	.09	.10	.09	.10	.09	.10
200 vis., 2½-3 color	.10	.10½	.10	.10½	.10	.10½



REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

300 vis., 3-3½ color	.10½	.11	.10½	.11	.10½	.11
350 vis., 3½-4 color	.11	.12	.11	.12	.11	.12
400 vis., 3½-4 color	.13	.14	.13	.14	.13	.14
Red Neutral:						
200 vis., 4½-5 color	.08½	.09	.08½	.09	.08½	.09
300 vis., 5-6 color	.09	.09½	.09	.09½	.09	.09½
400 vis., 5-6 color	.11	.11½	.11	.11½	.11	.11½
500 vis., 4½-5 color	.11¼	.12	.11¼	.12	.11¼	.12
500 vis., 5-6½ color	.11	.11½	.11	.11½	.11	.11½
600 vis., 6 plus color	.12	.12½	.12	.12½	.12	.12½

Note: Bright stocks are not manufactured commercially on the Pacific Coast.

NEW YORK (BAYONNE) REFINERY PRICES

	Sept. 27	Sept. 20	Sept. 13
Gasoline, U. S. Motor, 58-60 437	.08¼	.08¼	.08¼
Kerosene, water white, 41-43	.07½	.06½	.06½
*Fuel Oil, bunker "C," 14-16, per bbl.	1.65	1.65	1.65
*Fuel Oil, Diesel, 28-30, per bbl.	2.10	2.10	2.10
Gas Oil, 28 plus	.05½	.05½	.05½
25 pale Paraffin Oil	.12	.12	.12
28 pale Paraffin Oil	.07¼	.07¼	.07¼
285 red Paraffin Oil	.11½	.11½	.11½
250 red Paraffin Oil	.10½	.10½	.10½
225 red Paraffin Oil	.10	.10	.10
200 red Paraffin Oil	.09½	.09½	.09½
Refined Wax:			
120-122 a.m.p., per lb.	.04	.03⅞	.03⅞
125-127 a.m.p., per lb.	.04¼	.04⅛	.04⅛
130-132 a.m.p., per lb.	.04⅜	.04⅜	.04⅜
135-137 a.m.p., per lb.	.05¼	.05¾	.05¾
Petrolatum, in bbls., carload lots, per lb.:			
Dark Green	.01⅞	.07⅞	.01⅞
Amber	.03⅜	.03⅜	.03⅜
Extra amber	.03¾	.03¾	.03¾
Cream	.05¾	.05¾	.05¾
Lily white	.07⅜	.07⅜	.07⅜
Snow white	.08⅜	.08⅜	.08⅜

*Lighterage 6.5c a barrel extra.

NEW YORK (BAYONNE) EXPORT PRICES

	Sept. 27	Sept. 20	Sept. 13
Gasoline, U. S. Motor, 58-60 437, in cases	.2440	.2440	.2440
Kerosene, standard white, in cases	.1665	.1615	.1615
Kerosene, water white, in cases	.1765	.1715	.1715
600 steam refined cylinder stock, in bbls.	.16½	.16½	.16½
635 steam refined	.19	.19	.19
650 steam refined	.20	.20	.20
600 Pennsylvania flash	.23	.23	.23
630 Pennsylvania flash	.32	.32	.32
600 Warren E	.25	.25	.25
600 Oil City E	.24½	.24½	.24½
Light 135 Bright Stock	.43	.43	.43
Dark 135 Bright Stock	.41	.41	.41

LOS ANGELES EXPORT PRICES

	Sept. 27		Sept. 20		Sept. 13	
Kerosene, water white	.04	.04¼	.04	.04¼	.04⅛	.04¼
U. S. Motor Gasoline, 53-55 437 e.p.	.06¼	.06¾	.06¼	.06¾	.06	.06¼

CALIFORNIA CRUDE PRICES

Standard Oil Co.-Union Oil Co. (Effective April 1, 1927)*

Gravity—	1 Fullerton, Seal Beach, Long Beach, Huntington Beach, Richfield, Rosecrans-Dom'guez, Torrance-Inglewood	2 Whittier, La Habra, Montebello	3 Kern River, Newhall-McKittrick, Midway-Sunset, Elk Hills, Lost Hills, Belridge, Buena Vista Hills, Coyote	4	5 Santa Fe Springs	6	7 Coalinga, Wheeler Ridge	8 Santa Maria, Ventura, Orcutt, Salt Lake
14°	.85	.85	.75	.85	....	.75	.75	.85
15°	.85	.85	.75	.85	....	.75	.75	.85
16°	.85	.85	.75	.85	....	.75	.75	.85
17°	.85	.85	.75	.85	....	.75	.75	.85
18°	.85	.85	.75	.85	....	.75	.75	.85
19°	.85	.85	.75	.85	....	.75	.75	.85
20°	.85	.85	.77	.85	....	.76	.76	.85
21°	.86	.85	.79	.86	.85	.77	.77	.85
22°	.87	.85	.81	.87	.85	.78	.78	.85
23°	.88	.85	.83	.88	.85	.79	.79	.85
24°	.89	.85	.85	.89	.85	.80	.80	.85
25°	.90	.86	.87	.90	.86	.81	.81	.86
26°	.92	.87	.89	.91	.87	.83	.82	.87
27°	.94	.88	.91	.92	.88	.85	.83	.88
28°	.96	.89	.93	.93	.89	.87	....	.89
29°	.98	.90	.96	.94	.91	.89	....	.91
30°	1.00	.91	.99	.95	.93	.91	....	.93
31°	1.02	....	1.02	....	.95	.93	....	.95
32°	1.06	....	1.05	....	.97	.95	....	.97
33°	1.09	....	1.08	....	.99	.97	....	.99
34°	1.12	....	1.11	....	1.01	.99	....	1.01
35°	1.15	....	....	....	1.03	1.01	....	1.03
36°	1.18	....	....	....	1.06	....	....	1.06
37°	1.21	....	....	....	1.09	....	....	1.09
38°	1.24	....	....	....	1.12	....	....	1.12
39°	1.27	....	....	....	1.15	....	....	1.15
40°	1.30	....	....	....	....	....	....	....
41°	1.33	....	....	....	....	....	....	....
42°	1.36	....	....	....	....	....	....	....

*Column 1—Long Beach, Seal Beach and Huntington Beach crudes, 14 to 32 degrees, inclusive; Richfield and Fullerton, 14 to 30 degrees; Torrance and Inglewood, 14 to 28 degrees; Dominguez, 24 to 42 degrees. Rosecrans crude ranges from 14 to 42 degrees, but only Union Oil Co. posts below 24 degrees.

Column 2—Whittier crude, 14 to 22 degrees; Montebello, 14 to 30 degrees.

Column 3—Kern River, Newhall and McKittrick, 14 to 19 degrees; Midway-Sunset, Buena Vista and Elk Hills, 14 to 33 degrees; Lost Hills and Belridge, 14 to 34 degrees.

Column 8—Salt Lake, 14 to 19 degrees, inclusive; Santa Maria, 14 to 30 degrees, Ventura and Orcutt, 14 to 39 degrees. Posted only by Union Oil Co.

CRUDE OIL GRAVITY PRICE TABLE

Gravity—	1 Okla., Kans., N. C. Tex., La.-Ark.	2 Smackover, Ark.	3 Stephens, Ark.	4 Gray County (Texas Panhandle)	5 Crane, Upton, Pecos, Crockett Counties (West Texas)	6 Salt Creek, Wyo.	7 Grade B & Light Crude (G. Coast)	8 Somerset (South Central Texas)
Below 24	....	.90	....	....	....	....	....	....
24 and above	....	1.15	....	....	....	....	....	....
Below 25	....	....	....	....	....	....	1.15	....
25 to 25.9	....	....	....	....	....	....	1.17	....
Below 26	....	....	....	....	.60	....	....	....
26 to 26.9	....	....	....	....	.60	....	1.19	....
27 to 27.9	....	....	....	....	.60	....	1.21	....
Below 28	(*)	....	1.00	....	....	....	....	....
28 to 28.9	1.12	....	1.02	.80	.60	....	1.23	....
29 to 29.9	1.14	....	1.04	.82	.60	1.14	1.25	....
30 to 30.9	1.16	....	1.06	.84	.60	1.16	1.27	....
31 to 31.9	1.18	....	1.08	.86	.60	1.18	1.29	....
32 to 32.9	1.20	....	1.10	.88	.60	1.20	1.31	1.05
33 to 33.9	1.22	....	....	.90	.60	1.22	1.33	1.07
34 to 34.9	1.24	....	....	.92	.60	1.24	1.35	1.09
35 to 35.9	1.26	....	....	.94	.60	1.26	1.37	1.11
36 to 36.9	1.28	....	....	.96	.60	1.28	....	1.13
37 to 37.9	1.30	....	....	.98	....	1.30	....	1.15
38 to 38.9	1.32	....	....	1.00	....	....	....	1.17
39 to 39.9	1.34	....	....	1.02	....	....	....	....
40 to 40.9	1.36	....	....	1.04	....	....	....	....
41 to 41.9	1.38	....	....	1.06	....	....	....	....
42 to 42.9	1.40	....	....	1.08	....	....	....	....
43 to 43.9	1.42	....	....	1.10	....	....	....	....
44 to 44.9	1.44	....	....	1.12	....	....	....	....
45 to 45.9	1.46	....	....	....	....	....	....	....
46 to 46.9	1.48	....	....	....	....	....	....	....
47 to 47.9	1.50	....	....	....	....	....	....	....
48 to 48.9	1.52	....	....	....	....	....	....	....
49 to 49.9	1.54	....	....	....	....	....	....	....
50 to 50.9	1.56	....	....	....	....	....	....	....
51 to 51.9	1.58	....	....	....	....	....	....	....
52 and a ove	1.60	....	....	....	....	....	....	....

Column 1—Magnolia Petroleum Co. posted new schedule September 14, making price below 30 gravity $1.05 per barrel, with 2 cents increase per degree higher in gravity, taking 30-30.9 gravity at $1.16 as basis, with a top price of $1.60 for 52 and above.

Oklahoma: Prairie Oil & Gas Co., Sinclair Oil & Gas Co., Gypsy Oil Co., March 12; Carter Oil Co., The Texas Company, March 14.

North Central Texas—[Including Ranger, Mexia, Powell, Richland, Wortham, Lytton Springs (Southwest Texas), Iatan and Panola (Magnolia only), Currie, Nocona, Moran and Corsicana light]: Texas, Prairie, Sinclair and Gulf, March 12; The Texas Company, Humble Oil & Refining Co., March 14.

Kansas—Prairie, Sinclair, March 12; Carter, Texas, March 14.

Arkansas and North Louisiana—[Caddo, Bull Bayou, Crichton, De Soto, Haynesville, Homer and El Dorado only]: Standard Oil Co. of Louisiana, March 14; The Texas Company, March 14; Magnolia Petroleum Co., Pine Island, Haynesville and Bull Bayou, El Dorado, Gulf Pipe Line Co., March 14.

Column 2—On September 17, Louisiana Oil & Refining Co. On September 20, Standard Oil Co. of Louisiana, Magnolia Petroleum Co., Gulf Refining Co., and Atlantic Producing Co. September 23, The Texas Company.

Column 3—Atlantic Oil Producing Co., March 14.

Column 4—Humble Oil & Refining Co. and Gulf Pipe Line Co., March 14. On August 23 Magnolia Petroleum Co. posted flat 75 cents.

Column 5—Humble Oil & Refining Co., August 23; Kay County Gas Co., Magnolia Petroleum Co., and Gulf Pipe Line Co., August 24.

Column 6—Midwest Refining Co., March 12. All crude over 37 gravity, $1.30 per barrel.

Column 7—Humble Oil & Refining Co. and other major buyers (schedule ends "35 and above"), March 14, with exception of Magnolia Petroleum Co., which stops at 31 degrees gravity. Sun Pipe Line Co. posts 2 cents differential for each degree above 35 gravity and $1.47 for 40 gravity and above.

Column 8—Grayburg Pipe Line Co. and Pioneer Oil & Refining Co., April 7.

*Prices for crude below 28 gravity; Oklahoma, Kansas and Texas, Magnolia Petroleum Co., $1.10, March 12; Arkansas, North Louisiana, March 14. Other companies, 2 cents less for each degree, with exception of Humble Oil & Refining Co., which pays $1.12 for crude below 28 degrees gravity.

CRUDE OIL PRICES

OKLAHOMA, KANSAS, NARTH AND EAST CENTRAL TEXAS

*Corsicana heavy (March 14, 1927).....$1.00
Other fields ..... See gravity table

*Posted by Magnolia Petroleum Co.

TEXAS PANHANDLE

*Carson County .....$ .75
*Hutchinson County ..... .75
*Wheeler County ..... .75
Gray County ..... See gravity table

*Humble Oil & Refining Co.
Magnolia Petroleum Co., Gulf Pipe Line Co., and Kay County Gas Co., August 23.

WEST TEXAS

*Iatan (same as North Texas).
Crane-Upton-Crockett.....See gravity table

*Includes Howard County and Westbrook Fields. Kay County Gas Co. pays $1.05 for Howard County crude, effective May 21.

ARKANSAS-NORTH LOUISIANA

Cotton Valley (March 17) $1.00
Bellevue (Feb. 24, 1927) 1.25
Urania (Sept. 15, 1927) ..... .90
East El Dorado (Sept. 20) ..... .90
Other fields..... See gravity table

Note—Cotton Valley and Bellevue, Standard Oil Co. of Louisiana, Gulf Refining Co. and Magnolia Petroleum Co.; Urania, Louisiana Oil Refining Corp.; East El Dorado, Magnolia Petroleum Co., Gulf Refining Co.

GULF COAST

(Goose Creek, Hull, Liberty, West Columbia, Orange, Boling, Sour Lake, Humble, High Island, Pierce Junction and Spindletop.)

‡Grade A (March 14).....$1.20
Grade B ..... See gravity table
*Jennings, La. (March 14)..... 1.05
†Saratoga, Batson, Dayton (March 14, 1927) 1.20
§Markham (March 14) 1.00

*Gulf Pipe Line Co. †Sun Pipe Line Co. ‡Humble Oil & Refining Co. and other major buyers. §The Texas Company.

SOUTH CENTRAL AND SOUTHWESTERN TEXAS

*Luling (May 5) $1.00
†Mirando (March 14) 1.00
Rockdale-Minerva (April 15):
38-38.9 gravity 1.27
39-39.9 gravity 1.29
40 and above 1.31
*Thrall ....
Callihan (May 15) 1.75
Lytton Springs (Lockhart) See gravity table
Somerset ..... See gravity table

*Posted by Magnolia Petroleum Co. Thrall prices same as north central Texas less 19½ cents per cwt. freight.

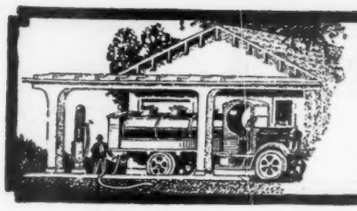
†Magnolia Petroleum Co., Humble Oil & Refining Co., Crown Central Pipe Line Co.

ROCKY MOUNTAIN STATES

Ohio Oil Co.-Midwest Refining Co.
(Effective March 14)

Rock Creek, Wyo. (March 12).....$1.25
Salt Creek ..... See gravity table
Big Muddy (March 12) 1.25
Mule Creek (May 1) 1.10
Grass Creek, heavy ..... .90
Grass Creek, light 1.33
Elk Basin (March 12) 1.33
Lance Creek (March 12) 1.33
Poison Spider 1.00
Notches ..... .65
Rex Lake (February 22) 1.10
Osage 1.33
Lost Soldier (contract) ..... .95
Greybull-Torchlight 1.33
Hamilton Dome ..... .85
Cat Creek (Mont.) 1.33
Sunburst (Mont.) 1.35

(Continued on Page 182)



TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns Sept. 27.

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)

	Gasoline Tank wag'n	Service station	Incids tax of	Kero. Tank wag'n
Chicago dist.	16.0	18.0	2.0	12 0
Decatur, Ill.	10.5	12.5	2.0	12 1
E. St. Louis	15.1	17.35	2.0	11.2
Joliet	16.4	18.4	2.0	12.3
Peoria	12.0	12.0	2.0	12.1
Quincy	16.2	18.2	2.0	11.9
Davenport, Ia.	17.5	19.5	3.0	12 3
Des Moines	17.0	19.0	3.0	12.3
Keokuk	17.5	19.5	3.0	12.3
Sioux City	17.1	19.1	3.0	11.9
Duluth, Minn.	15.5	17.5	2.0	12.9
Minneapolis	14.0	14.0	2.0	12 9
Mankato	17.1	19.1	2.0	12.7
LaCross, Wis.	17.2	19.2	2.0	13.0
Milwaukee	16.1	18.1	2.0	11.9
Madison	16.3	18.3	2.0	12.1
Detroit, Mich.	17.8	19.8	3.0	13.7
Grand Rapids	15.5	17.5	3.0	13.6
Saginaw	17.9	19.9	3.0	13.8
Evansville, Ind.	17.0	19.0	3.0	13.0
Ft. Wayne	14.0	14.0	3.0	13.4
Indianapolis	15.2	15 2	3.0	12 2
South Bend	15.0	15.0	3.0	13.4
Fargo, N. D.	17.0	19.0	2.0	14 9
Huron, S. D.	19.5	21.5	4.0	13 9
Sioux Falls	15.0	17.0	4.0	13 4
*K. C., Mo.	14.9	16.9	3.0	10.6
*Springfield	16.8	18.8	3.0	11.5
*St. Louis	15.6	17.9	2.5	11.3
*St. Joseph	14.5	16.5	3.0	11.2
Wichita, Kans.	14.8	16.8	2.0	10.8
Bartlesville, Ok.	15.8	17.8	3.0	10.8

NAPHTHAS

	Tank wagon	Tank car
Oleum spirits	16.0	10.75
V. M. & P. naphtha	18.0	12.75
Cleaner's naphtha	18.0	13.75
Stanisol	19.0	14.75

Tank wagon prices f.o.b. Chicago; tank car prices f.o.b. Whiting.

STANDOLIND FURNACE OIL

Less than 100 gallons	9.0
100 to 799 gallons	8.0
800 or more gallons	7.5

Tank wagon prices of gasoline subject to discount of 1 cent a gallon on dumps of 50 gallons or more throughout territory except Chicago district where discount applies only to dumps of 100 gallons. Kerosene subject to 1 cent discount on dumps of 50 gallons or more.

Outside the Chicago district, the following quantity discount schedule is in effect on monthly tank wagon deliveries of gasoline: 6,000 gallons or more, 1½ cents; 10,000 gallons or more, 2 cents; 15,000 gallons or more, 3 cents. These discounts include the 1 cent allowed on dumps of 50 gallons or more at one delivery.

Within the Chicago district, the following quantity discount schedule is in effect on tank wagon deliveries of gasoline: 750 to 2,000 gallons, one-half cent; 2,000 to 3,000 gallons, three-fourths cent; 3,000 to 6,000 gallons, 1 cent; 6,000 to 10,000 gallons, 1½ cents; 10,000 to 15,000 gallons, 2 cents; 15,000 gallons or more, 3 cents. These discounts are in addition to the special discount of 1 cent on dumps of 100 gallons or more at one delivery.

If the quantity bought during the year is equal to or exceeds 12 times the agreed monthly quantity, the discount is paid or credited on the entire quantity at the close of the term less the monthly payments made during the year.

*State tax 2 cents; remainder city tax.

OHIO

Standard Oil Co. (Ohio)

	Gasoline Tank wag'n	Service station	Incids tax of	Kero. Tank wag'n
All Ohio points	19.0	21.0	3.0	14 5

SOUTHWESTERN DISTRICT

Magnolia Petroleum Co.*

	Gasoline Tank wag'n	Service station	Incids tax of	Kero. Tank wag'n
Dallas, Tex.	14.0	17.0	3 0	11.0
Fort Worth	14 0	16 0	3.0	10 0
Houston	14.0	17.0	3 0	15 0
San Antonio	14.0	16 0	3 0	11 0
El Paso	16.0	18.0	3.0	16.0
Texarkana	15.0	18.0	3.0	12.0
Muskogee, Ok.	15 0	18.0	3.0	9 0
Okla. City	15.0	18.0	3.0	9 0
Tulsa	15.0	18.0	3.0	9 0
Ft. Smith, Ark.	16.0	19.0	5.0	12 0
Little Rock	16.0	18.0	5.0	12.0

*The following is the schedule of discounts on quantity gasoline sales adopted by the Magnolia Petroleum Co. in Oklahoma: Over 750 gallons a month, one-half cent; over 2,000 gallons, three-quarters cent; over 3,000 gallons, 1 cent; over 4,500 gallons, 1¼ cents; over 6,000 gallons, 1½ cents; over 8,000 gallons, 1¾ cents; over 10,000 gallons, 2 cents. If the quantity bought during the year is 12 times the monthly agreed purchases, the discount will be paid or credited on the entire quantity for the year less any monthly purchases.

The schedule on service station deliveries is: Over 200 gallons a month, 1 cent; over 300 gallons a month, 1¼ cents; over 400 gallons, 1½ cents; over 500 gallons a month, 1¾ cents; over 600 gallons, 2 cents. The same rule applies for annual purchases in the tank wagon discounts.

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline Tank wag'n	Service station	Incids tax of	Kero. Tank wag'n
*N. Orleans, La.	14.5	18.5	3.0	14.0
Baton Rouge	14.0	17.0	2.0	12.5
Alexandria	15.0	18.0	2.0	14.0
LaFayette	15.0	18.0	2.0	13.5
Lake Charles	15.5	18.5	2.0	14.0
Shreveport	16.5	18.5	2.0	13.0
Kn'xville, T'nn.	19.5	22.5	3.0	15.0
Memphis	15.0	18.0	3.0	14.0
Chattanooga	19.5	22.5	3.0	15.0
Nashville	18.0	21.0	3.0	15.0
Bristol	19.0	22.0	3.0	14.0
Lit. Rock, Ark.	18.0	21.0	5.0	12.0

*Tax of 3 cents includes city tax of 1 cent.
*Louisiana kerosene prices include 1-cent state tax and 1-cent parish tax.

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline Tank wag'n	Service station	Incids tax of	Kero. Tank wag'n
Atlanta, Ga.	16.0	18.0	4.0	15.5
Augusta	19.0	22.0	4.0	16.5
Macon	19.0	22.0	4.0	16.5
Savannah	16.0	18.0	4.0	14.5
Birm'h'm, Ala.	18.0	21.0	4.0	15.5
Mobile	17.0	20.0	4.0	15.0
Montgomery	19.0	22.0	5.0	16.5
Clarke'le, Miss.	17.0	20.0	4.0	12.5
Jackson	17.0	20.0	4.0	13.5
Natchez	16.5	19.5	4.0	14.0
Gulfport	18.5	21.5	6.0	14.0
Vicksburg	16.5	19.5	4.0	14.0
Jack'ville, Fla.	15.0	18.0	5.0	14.0
Miami	17.0	20.0	5.0	15.5
Pensacola	16.0	19.0	5.0	15.0
Tampa	14.0	17.0	5.0	14.0
Lexington, Ky.	18.0	21.0	5.0	15.5
Covington, Ky.	19.0	22.0	5.0	15.5
Louisville	19.0	22.0	5.0	15.0

In addition to the state tax of 2 cents on gasoline, Montgomery has city tax of 1 cent on gasoline. Kerosene prices in Georgia includes 1 cent tax. In Florida, an inspection fee of 0.125 cent; in Alabama, an inspection fee of one-half cent on kerosene only. Pensacola tax includes 1 cent city levy. Gulfport tax includes privilege tax of 2 cents in addition to state tax.

PENNSYLVANIA-DELAWARE AND PART NEW ENGLAND

Atlantic Refining Co.

	Gasoline Tank wag'n	Service station	Incids tax of	Kero. Tank wag'n
Pittsburgh, Pa.	16.0	*22.0	...	14.0
Philadelphia	14.0	17.0	...	14.0
Scranton	16.0	*22.0	...	14.0
Allentown	16.0	*22.0	...	14.0
Altoona	16.0	*22.0	...	14.0
Erie	14.0	*18.0	...	14.0
Dover, Del.	19.0	22.0	3.0	14.0
Wilmington	19.0	22.0	3.0	14.0
Spring'd, Mass.	17.0	17.0	...	15.0
Worchester	17.0	17.0	...	15.0
Boston	17.0	17.0	...	15.0
Providence, R.I.	19.0	19.0	2.0	15.0
Hartford, Conn.	21.0	22.0	2.0	15.0
New Haven	21.0	22.0	2.0	15.0

*Includes tax of 3.0 cents. Pennsylvania tax is collected by the dealer and paid by him direct to the state.

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline Tank wag'n	Service station	Incids tax of	Kero. Tank wag'n
Albany, N. Y.	17.0	19.0	...	15.0
*New York	17.0	19.0	...	15.0
Buffalo	17.0	19.0	...	14.0
Rochester	13.0	16.0	...	14.0
Syracuse	17.0	19.0	...	15.0
Boston, Mass.	17.0	19.0	...	15.0
Augusta, Me.	20.0	22.0	3.0	15.0
M'nch't'r, N.H.	18.0	22.0	3.0	15.0
Burlington, Vt.	20.0	22.0	3.0	15.0

*Price in steel barrels.

PACIFIC COAST DISTRICT

Standard Oil Co. (California)

	Gasoline Tank wag'n	Service station	Incids tax of	Kero. Tank wag'n
San Francisco	17.0	21.0	3.0	15.5
Pueblo	18.0	18.0	3.0	15.5
Los Angeles	16.5	20.5	3.0	15.5
Reno, Nev.	22.0	26.0	4.0	19.0
Portland, Ore.	17.5	21.5	3.0	16.5
Seattle, Wash.	16.5	20.5	2.0	16.5
Tacoma	16.5	20.5	2.0	16.5
Spokane	20.5	24.5	2.0	20.5
Phoenix, Ariz.	22.0	26.0	3.0	20.5

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline Tank wag'n	Service station	Incids tax of	Kero. Tank wag'n
Atlantic City	18.0	20.0	2.0	14.0
Newark, N. J.	18.0	20.0	2.0	14.0
Annapolis, Md.	20.0	23.0	4.0	12.0
Baltimore	20.0	23.0	4.0	10.0
Cumberland	20.0	23.0	4.0	14.0
Washington	18.0	21.0	3.0	12.0
Danville, Va.	20.5	....	4.5	14.0
Norfolk	20.5	23.5	4 5	12 0
Petersburg	20.5	23.5	4.5	14.0
Roanoke	20.5	23.5	4.5	14 0
Richmond	18.5	21.5	4.5	14.0
Ch'rlst'n, W.Va.	20.0	23.0	4.0	14.0
Keyser	20.0	....	4.0	14.0
Parkersburg	17.0	20.0	4.0	14.0
Wheeling	20.0	23.0	4.0	14.0
Charlotte, N. C.	20.0	23.0	4.0	14.0
Hickory	20.0	23.0	4.0	14.0
Mt. Airy	20.0	23.0	4.0	14.0
Salisbury	20.0	23.0	4.0	14.0
Charl'stn, S. C.	20.0	22.0	5.0	14.0
Columbia	20.0	20.0	5.0	14.0

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline Tank wag'n	Service station	Incids tax of	Kero. Tank wag'n
Omaha	14.25	16.25	2.0	12.25
McCook	14.75	14.75	2.0	11.50
Norfolk	16.75	18.75	2 0	12 75
N. Platte	17.75	19.75	2.0	13.50
Scottsbluff	17.25	19.25	2.0	13.00

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline Tank wag'n	Service station	Incids tax of	Kero. Tank wag'n
Denver, Colo.	16.0	18 0	3 0	12 5
Pueblo	18.0	20.0	3.0	14.5
Grand Jnctn.	21.5	23.5	3.0	18.0
Casper, Wyo.	18.0	20 0	3 0	13 0
Cheyenne	19.0	21.0	3.0	14.5
Butte, Mont.	22.0	22.0	3.0	19.0
Helena	22.5	24.5	3.0	19.0
Salt Lake, Utah	21.0	23.0	3.5	17.0
Boise, Idaho	23.5	25.5	4.0	19.0
Twin Falls	23.5	25.5	4.0	19.0
Albu'que, N. M.	21.0	24.0	5.0	17.0

TANK WAGON CHANGES

September 20—Continental Oil Co. reduced the gasoline tank wagon and station prices 2 cents in Denver, Colo., making the new prices 16 cents and 18 cents, respectively.

September 21—Standard Oil Co. of Indiana reduced the gasoline tank wagon and station prices to 15 cents in Fort Wayne and South Bend, Ind.

September 26—Standard Oil Co. of Indiana reduced the gasoline tank wagon and station prices 2.2 cents in Grand Rapids, Mich., making the new prices 15.5 cents and 17.5 cents, respectively.

CALIFORNIA MARKET CONTINUES UNCHANGED

LOS ANGELES, Calif., Sept. 24.—The domestic demand for California gasoline continues strong. Due to continuation of warm weather, there is still a great deal of touring being done with a corresponding large consumption of gasoline. As a result, the market continues about the same with no price change in sight.

Out-of-state shipments of gasoline have been heavy during the summer. California companies are selling large volumes of their products, especially gasoline in the Rocky Mountain market. The competition has become so keen for this class of business that in a few cases sales have been as low as 7 cents f.o.b. Los Angeles. This, however, is not a true index of present market conditions as the larger companies are in every case quoting from 8½ to 9 cents.

California marketers expect to move considerable quantities of gasoline to Australia during the next few months. Australia is just about to begin its summer and the heavy demand for gasoline in this part of the world will be during the next few months. From the number of inquiries already received by California companies, the indications are that this year will see heavy consumption of gasoline.

Natural gasoline remains weak. There have recently been several contracts made at 9 cents under the service station price, tax excluded, for a period of three years. One of the larger oil companies is buying large quantities of this product on this basis. The immediate result has been that quantities of natural gasoline which otherwise would have been actively in the spot market have now been removed and the spot market is for the time being a trifle stronger. The outlook for natural gasoline during the coming months is not very bright.

Lubricating oils are still in the doldrums. Demand has been satisfactory but as more refiners have entered into this market, prices have weakened and general conditions are poor. No immediate improvement is in sight.

SANTO DOMINGO OIL CONCESSION CONTRACT

The Texas Company is reported to have closed a contract to take over for exploration and operation 1,400,000 acres in four concessions held by Antillian Petroleum Co. on the Island of Santo Domingo. One wildcat well has started several days ago on one of three concessions which cover entire province of Azua. Fourth concession is in province of Barahona.

Under arrangement, stock of Antillian Petroleum Co. is placed in escrow during the period of exploratory work which runs for a maximum of five years. The Texas Company does not make any purchase of the Antillian stock. With discovery of any production, The Texas Company gets its costs back from first oil produced and then gets 75 per cent and Antillian Petroleum 25 per cent of any profits.

Santo Domingo has been under protectorate of United States for a number of years. One well was drilled on the island in 1904 with a report of oil showing.

CRUDE OIL PRICES

(Continued from Page 181)

Artesia (March 12)	1.00
Hogback (N. Mex.) (March 14)	1.38

Note: Salt Creek, Osage, Cat Creek, Greybull and Hogback posted by Midwest Refining Co., and the remainder by the Ohio Oil Co. Both companies post Grass Creek light and Elk Basin.

EASTERN STATES

Joseph Seep Purchasing Agency
(Effective August 1)

Penna Grade Oil in New York Transit Line (New York)	$2.65
Bradford District Oil in National Transit Lines (Pennsylvania)	2.65
Penna Grade Oil in National Transit Lines (Pennsylvania)	2.55
Penna Grade Oil in Southwest Pennsylvania Lines (West Virginia)	2.55
Penna Grade Oil in Eureka Pipe Line lines (Pennsylvania)	2.50
Penna Grade Oil in Buckeye Pipe Line lines (Ohio) (August 23)	2.25
Cabell Grade Oil in Eureka Pipe Line lines (West Virginia) (March 16)	1.40
Corning 35-cent grade oil in Buckeye Pipe Line Co.'s line (March 17)	1.35
Corning 25-cent grade oil in Buckeye Pipe Line Co.'s lines (March 17)	1.45
Somerset Oil in Cumberland Pipe Line lines (Kentucky) (March 16)	1.50
Ragland Grade Oil in Cumberland Pipe Line lines (Kentucky)	.95
Keister (Pennsylvania)	1.10

MIDDLE WESTERN STATES

Ohio Oil Co.
(Effective March 14)

Lima	$1.71
Wooster	1.57
**Saginaw, Mich., Saginaw Sand (May 27)	2.05
Illinois	1.60
Indiana	1.48
Princeton	1.60
Plymouth	1.33
Waterloo (Nov. 17, 1926)	1.35
*Western Kentucky	1.33
**Saginaw, Mich., Berea Sand (May 27)	1.95
†Cumberland, Barren, Clinton and Monroe Counties, Kentucky (March 16)	1.50
‡Oil in lines of Stoll Oil Refining Co. in Oil City, Ky. (March 16, 1927)	1.50
†Clay County, Tennessee (Nov. 18)	2.35
§Oil Springs (Canada)	2.10
§Petrolia (Canada)	2.11

*Posted by Ohio Oil Co.
†Posted by Paragon Development Co.
‡Posted by Stoll Oil Refining Co.
§Posted by Imperial Oil Co., Ltd.
**Posted by Sun Oil Co.

MEXICAN CRUDE

Note—Due to the fact that the exportation of Tuxpam light crude oil has become a negligible factor, prices will no longer be published.

*Panuco heavy (f.o.b. Mex. ports)	$1.15

*17.496 cents tax.

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Starks Dome Is Making Oil History

Louisiana Field One of Most Thorough, Systematic and Economical Developments in Annals of Industry

By Neil Williams

SHREVEPORT, La., Sept. 26.—Some day there may be listed among the Gulf Coast's most prolific fields the name of Starks Dome. To the majority of operators it probably will be just another of the several productive spots which have been tapped in that territory along coastal Texas and Louisiana but to those who have had an actual part in its opening it will mean the accomplishment of one of the most thorough, systematic and economical programs of oil field development in the history of the industry.

Starks Dome is making oil history. This is not in the sense there are, or will be, any sensational daily production reports such as witnessed by the pools of the Seminole district of Oklahoma or those of Western Texas. To the contrary, its development represents the embodiment of the principles of co-operative operations. Starks Dome has a new story to tell on the business of producing oil.

This is not a discussion of the merits or disadvantages of the unit plan of operation so lately advocated by many of the country's oil leaders as a solution of the problem of new flush fields. Starks Dome originally was not intended as a unit proposition and still may not be classed as such but circumstances peculiar to that field make a unit application possible.

The district known as Starks Dome embraces an area of approximately nine sections of land near Starks, about 8 miles northwest of the town of Vinton, Calcasieu Parish, in the extreme southwestern part of Louisiana. The acreage is held entirely by the Standard Oil Co. of Louisiana and the Gulf Refining Co., each owning an undivided half interest and sharing equally in the cost of development and the returns.

Careful Exploration

Starks Dome has an interesting story for two particular reasons: First, it is a salt dome structure; second, the co-operative angle of its development coupled with a history of careful exploration.

Salt dome operations in the Gulf Coast territory have been interesting because it is around them that some of the most prolific pools have been uncovered, Spindletop being a well known example. And, at present, the future oil possibilities of the coastal district are hinged largely on the discovery and development of new salt domes. The search for domes is one of the biggest oil plays going on along the Gulf, especially in Southern Louisiana.

For more than three years, a number of major companies steadily have been acquiring holdings around known salt domes and obtaining shooting options on extensive tracts throughout the entire coastal belt, not only in Louisiana and Texas but reaching into Mississippi, where domes are believed to lie hidden, and there has been doing thorough seismograph work.

Salt dome operations have been discounted by some of the major companies and frowned on by many leaders of the industry as unprofitable ventures. It has been general opinion the cost of locating dome structures, coupled with the development expense, is far in excess of the returns. One major company engaged in this work figures that the average cost of finding a dome alone is $600,000. This, with the law of averages in opening fields, so far being one dome in three, would seem to make a salt dome campaign prohibitive. Especially is this the belief since these pools, although prolific when tapped, generally are small in area necessitating much drilling to find the productive spot.

With Tenth of Expense

Herein is one side of the Starks Dome story. From indications of this field and from information gained through the activity of the Standard Oil Co. of Louisiana, it appears that the finding and development of this structure has been far less expensive than usually is the case. Even in considering all its salt dome exploration the company's expense in locating the structure probably is less than a tenth of the estimated average cost of other companies doing exploration work in the Gulf Coast territory.

The history of this district from an oil standpoint dates back to the early part of 1924 when the Vacuum Oil Co. encountered a showing for a small well in its first test drilled below Lockport, near Lake Charles. That was a distance of some 20 or 25 miles from the present Starks Dome but it served to attract the Standard Oil Co. of Louisiana, and, later, the Gulf Refining Co., to further possibilities in that part of the state.

During September and October of the same year, the Standard Oil Co. made an extensive survey of the areal geology of a large tract of land owned by the Lutcher & Moore Lumber Co. in Calcasieu and Beauregard Parishes, extending from a point a few miles northwest of Vinton to DeQuincy. This tract was about 20 acres across and contained approximately 60,000 acres.

This survey did not disclose enough favorable indications to justify deep drilling but not satisfied without more conclusive information as to the subsurface formations the Standard Oil Co. made a deal with the Lutcher & Moore Lumber Co. and the Industrial Lumber Co., the latter owning around 25,000 acres of adjoining land, whereby it was permitted to drill a number of shallow holes over that district.

Three 1,500-Foot Tests

In all, 72 shallow holes were drilled at scattering points on the tract. The holes were drilled by hand and the work was completed in the early part of February of 1925. All this, however, threw very little additional light on the possibilities of the district so the latter part of March the Standard Oil Co. made another deal with the two lumber companies providing for the drilling of three 1,500-foot tests, these to be drilled purely for geological reasons.

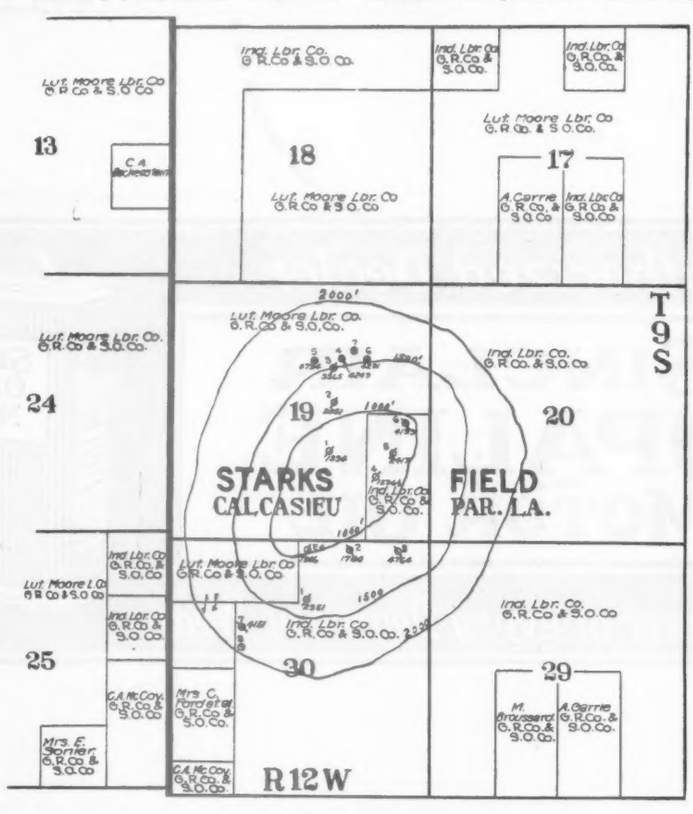
Up to this time operations of the Standard Oil Co. and the Gulf Refining Co. were conducted separately, the Gulf also having obtained a lease on approximately 20,000 acres of the Lutcher & Moore Lumber Co.'s land preparatory to making an individual survey. After the Standard Oil Co. had completed two of its three contracted 1,500-foot tests and was drilling on the third it was decided it would be for the mutual advantage of both companies to work together so arrangements were made for the pooling of their interests.

Joint Seismograph Work

It was at that time that the initial seismograph work was started in Southern Louisiana to locate hidden salt domes. This was largely responsible for the pooling of interests by the two companies as it was felt that the search for the salt dome or domes believed to exist in that territory could be conducted more effectively by joint seismograph operations over the combined holdings.

In view of the fact that the Standard Oil Co. already had drilled two tests and was drilling a third, it was agreed that the Gulf Refining Co. should pay half the cost of the tests contracted and also conduct seismograph operations over the joint properties, the Standard paying half the cost of shooting. It was also agreed that each company pay half of all future development work and in any additional acreage acquired in that vicinity.

This arrangement in this particular instance was made possible because the ownership of the great bulk of the land in that part of the state was, and still is, in two hands, the Lutcher & Moore Co. and the Industrial Lumber Co.



Plat of Starks Field, Calcasieu Parish, La., showing location of salt dome and operations of Standard Oil Co. of Louisiana and Gulf Refining Co.

Discovery of Dome

That was in July, 1925, and shooting was started immediately by the seismograph crews resulting in the discovery the middle part of September of the salt dome structure, which was designated as Starks Dome, after the town near which it is located. The dome was found to underlie Sections 19 and 30 of Township 9 south, and Range 12 west. Approximately half of the dome was under the Industrial Lumber Co.'s land originally held by the Standard Oil Co. and the remainder under the Lutcher & Moore Co.'s property, on which each oil company formerly held individual leases.

A short time after this discovery, the Standard Oil Co., in the early part of October, started a test on the Industrial Lumber Co.'s land in Section 30-9s-12w, at a point estimated to overlie the highest part of the dome. This did not make a producing well, but, drilled to a depth of approximately 1,300 feet, showed conclusive evidence of dome formation. Since that time 13 additional tests have been drilled, three of which resulted in producers.

Up to the completion on January 21, 1927, of Gulf Refining Co.'s No. 4 Lutcher & Moore, Section 19, a 2,500-bbl. well, the drilling was done by individual companies although each shared in the cost. But at this time, due to the Gulf Refining Co.'s more extensive operations throughout the Gulf Coast district, it was agreed that in the future all operations on the joint properties should be handled by the Gulf with the Standard sharing half of the cost and receiving half the oil belonging to the working interest.

Two More Producers

Since that arrangement was made, the Gulf Producing Co. has drilled two more producers, Nos. 5 and 6, both on the Lutcher & Moore Lumber Co.'s land, Section 19. No. 5 was completed June 24, 1927, with an initial daily production of 1,000 bbls. and No. 6 on August 29, 1927, with an initial flow of 1,600 bbls. Locations also have been staked for two more deep tests, No. 7 Lutcher & Moore, Section 19, and No. 8 Industrial, Section 30.

The three producers so far completed are in a straight, east-west line on the north flank of the dome on the Lutcher & Moore Lumber Co. land, each producing from a depth of approximately 4,300 feet. Other tests at scattering locations were drilled to various levels as shown in an accompanying plat. The two new locations, one, the No. 8 Industrial, on the extreme southwest edge of the dome, are for deep tests.

Possible Prolific Field

Indications so far have pointed to the development of a prolific field somewhere around this dome. The three producers have yielded better than 220,000 bbls. of oil, all this being since January 21, 1927. All three wells still are flowing and are averaging around 900 bbls. net oil daily. Of particular importance is the fact that one of these wells, No. 5, is flowing oil testing 40.4 degrees gravity.

Also of interest is the fact that several of the tests encountered formations rich in sulphur, one of the tests, No. 2 Lutcher & Moore, having 33 feet of sulphur-bearing rock at 1,639-72 feet. The Standard Oil Co. and the Gulf Refining Co.

hold the rights to this as well as all other minerals.

Since the discovery of Starks Dome in September, 1925, the Standard Oil Co. has extended its salt dome operations to other parts of Southern Louisiana, although not in conjunction with the Gulf Refining Co. This work resulted in the location last February of three favorable areas, two of which are considered positive salt domes and the third probably being a dome. In addition that company holds some 300 acres supposed to overlie a dome area discovered by others. These are in Iberville Parish and were discovered as a result of shooting operations conducted by the Union Sulphur Co., which for the sulphur rights, obligated itself to drill a test on each dome found. Under this arrangement, drilling, which had been delayed because of flood waters, will begin in the near future.

While those connected with the Standard Oil Co. are very much pleased with the apparently successful result of the company's activities in the Gulf Coast district, the writer, in course of his conversation with these people, was given the impression that they consider the element of luck as the controlling factor in their accomplishments.

NORTH AND WEST TEXAS

(Continued from Page 30)

be reckoned with in any forecast of future production in West Texas.

No new developments of importance were reported from the Hendricks Pool this week with the exception of some new locations. But these numbered no less than 11 and are therefore important. Several will call for additional offsets, also. Southern Crude's No. 3 T-88 Grisham-Hunter-A-2 is 2,310 feet from the north line and 990 feet from the west line of Section 35, Block B-5. A rig is moving in. Same company's No. 2 Grisham-Hunter T-188-C is 990 feet from the west line and 330 feet from the north line of Section 28, Block B-5.

Cranfill & Reynolds' No. 1 Grisham-Hunter-A is located in the center of a 10-acre lease and is 660 feet from the south line and 1,650 feet from the west line of Section 35, Block B-5. Roxana Petroleum Corp.'s No. 1 Grisham-Hunter-C is located in the NE cor. NW of Section 29, Block B-5. Same company's No. 1 Grisham-Hunter-D is in the SW cor. NE of Section 41, Block B-5.

Atlantic Oil Producing Co.'s No. 1 Grisham-Hunter (Le Marr) is in the SW cor. of Section 40, Block B-5. Same company's No. 2 Hendrick-A is in the SE cor. SW of Section 34, Block B-5.

Mathison and others' No. 1 Hendricks is located 2,250 feet from the north and east lines of Section 28, Block B-5. Murchison Oil Co. and others' No. 1 Hendricks-C is in the NE cor. Section 29, Block B-5; No. 2-C is 330 feet from the east line and 990 feet from the north line of the same section. Republic Production Co.'s No. 3 Hendricks is 330 feet out of the SE cor. of Section 41, Block B-5.

Wildcat Locations

Three unusually interesting wildcat locations were announced this week, one each in Upton, Crane and Ector Counties. In Upton County The Texas Company and Cordova Union Oil Co.'s No. 1 Union Land is 330 feet from the NW line and 470 feet from the NE line of Section 23, Block 35, H. & T. C. Survey.

In Crane County, Duffey and Gault & Brown's No. 1 Cowden Brothers & Co. is located 1,650 feet from the north line and 1,320 feet from the east line of Section 22, Block X, C. C. S. D. & R. N. G. Survey. These interests own the SE quarter and the S half of NE. Texas Development Co. owns the N half, NE. Humble Oil & Refining Co. owns the E half, NW, Prairie Oil & Gas Co. has the W half, NW, Marland Oil Co. owns the N half, SW, and The Texas Company has the S half, SW of this section. This location is in a northwesterly trend from the McCamey-Taylor Pool and other Upton County production, and is situated in the midst of several dry holes which, however, are located several miles apart, far enough to shelter a major field between them.

In Ector County, The Texas Company and J. S. Cosden have decided to move southward for their fourth test on the Connell land and it is to be drilled in the SE¼ cor. of Section 24, Block B-16, about 1¾ miles due south of Nos. 1, 2 and 3 Connell.

In the Church-Fields Pool, Magnolia Petroleum Co.'s No. 12 O'Keefe-University is a new location, 1,650 feet from the north line and 990 feet from the west line of Section 38, Block 30.

Good Well in Church-Fields

Prairie Oil & Gas Co. added a big well to the Church-Fields Pool during the week when their No. 4 State-Lasseter, SW cor. NE, Section 47, Block 30, was drilled in. It flowed 4,800 bbls. at 2,831-2,950 feet. While not marking an extension to the field, this well is situated on the eastern line of producing wells and is a half-mile north of the Landreth strip. It furnishes further evidence that the producing area will extend farther to the east than anticipated some time ago.

Landreth Production Co.'s No. 15 State-Cowden-Anderson, was swabbing 240 bbls. of oil and about 8 bbls. of water this week. It was reported last week as shot with 180 quarts from 2,854 to 2,911 feet. No. 16, location east of No. 15, and just south of the SE cor. of Section 47, Block 30, had 2,000 feet of oil in the hole at 2,900-15 feet but the pipe was damaged when it was shot.

Gulf Production Co. added a couple of wells on the McElroy block and made a couple of new locations. No. 37 J. T. McElroy was shot with 160 quarts from 2,784 to 2,894 feet, total depth 2,897 feet, and flowed 105 bbls. the first hour, and 80 bbls. the second hour. The first six hours it made 360 bbls. and was estimated a 1,440-bbl. well. No. 39 was swabbing and flowing 355 bbls. at 2,930 feet, top of pay 2,827 feet, and will be shot. Locations were made for two tests on the third line of wells south of the Landreth strip. No. 43 J. T. McElroy is midway between Nos. 23 and 24 and the regular distance south of these. No. 44 is midway between Nos. 24 and 31 and the regulation distance south.

Gulf Production Co. is also moving in a standard rig to replace the machine which drilled No. 2 W. N. Waddell, NE cor. Section 10, Block B-25. This well opened a new pool about 10 miles northwest of the Church-Fields production and was recently completed for 30 bbls. at total depth of 3,500 feet. The hole is to be deepened.

Upton County Locations

Some interesting Upton County locations were made by R. H. Paxton on the Orient railway right of way where it crosses the southeast extension of Upton County production. Six locations were made at intervals of 880 feet. No. 1 is 720 feet from the west line of Section 3, G. C. & S. F. Survey, and 25 feet from the north line of the right-of-way. This puts it just southeast of Gulf Production Co.'s No. 5 Lane. No. 2 is 880 feet northeast of No. 1 and 25 feet from the south line of the right-of-way. Nos. 3 to 6 are spaced at intervals of 880 feet and are staggered alternately on each side of the track. A machine has been moved in for No. 1.

In Jones County, Phillips Petroleum Co. is building a rig for No. 2 J. C. Mason, SW cor. W half, NE Section 18, Block 19, T. & P. Survey.

NORTH CENTRAL TEXAS COMPLETIONS

Ranger District—Brown County

Adamson & Bearman's No. 1 Miller will be completed as a gasser good for 2,000,000 feet of gas at 1,167 feet. Brooks & Dozier's No. 1 Hart & Roth made 17 bbls. of oil and 100 bbls. of water initially at 1,233-36 feet.

Forest Oil Co.'s No. 2 Moore was a 70-bbl. well at 1,253-61 feet; No. 10 Smith was estimated good for 150 bbls. after a 1½-quart shot at 1,326-44½ feet.

Gholson and others' No. 2 Collier was dry and abandoned at 1,167 feet. Gilman & McMurray's No. 17 Teston topped sand at 1,233 feet and was estimated a 40-bbl. well while drilling at 1,256 feet. Humphrey Brothers' No. 2 McCully was plugged back from 1,289 to 1,287 feet and made 3 bbls. of oil along with 100 bbls. of water at 1,283-87 feet. Josey & Flinchbaugh's No. 1 Jones was dry and abandoned at 1,200 feet. Ross Drilling Co.'s No. 1 Miller was also a duster at 1,646 feet.

Roxana Petroleum Corp.'s No. 14 Smith made 185 bbls. initial at 1,306-35 feet; No. 17 Smith topped sand at 1,325 feet and was good for 184 bbls. at 1,348 feet, still in sand. Selby Oil Co.'s No. 15 Ellis was abandoned as a failure at 1,407 feet although it had sand at 1,323-29 feet and a rainbow showing in sand at 1,392-1,407 feet. Same company's No. 16 Ellis was estimated good for 15 bbls. at 1,327-39 feet but will be shot. Sinclair Oil & Gas Co.'s No. 4 Smith had sandy lime from 1,298 to 1,303 feet and sands at 1,303-06½ feet and 1,315-20 feet. It was flowing 12 bbls. an hour.

Callahan County

Bradstreet's No. 1 Swafford was completed for 190 bbls. at 1,674-1,704 feet. Prairie Oil & Gas Co.'s No. 4 Baum made 50 bbls. at 1,683-1,715 feet; No. 1 Swafford was swabbing and flowing 87 bbls. in 15 hours from sand at 1,670-95 feet.

Stalker Oil Co.'s No. 1 McCord was dry at 802 feet; same company's No. 1 Seale estate was also abandoned at 1,050 feet. Star & Kiser's No. 1 Blakley was a duster at 863 feet.

Coleman County

National Refining Co.'s No. 1 Crump was dry and abandoned at 1,206 feet. Hodge & Baker's No. 1 Vaughn was also dry at 942 feet.

Eastland County

Prairie Oil & Gas Co.'s No. 2 Parsons flowed 312 bbls. initially from sand at 1,608-16 feet and at latest report was making 169 bbls. The location for Chestnut & Smith's No. 1 Ward was awandoned. Cranfill & Reynolds' No. 4 Spencer was also plugged as dry at 3,010 feet, after a shot of 200 quarts from 2,961 to 3,010 feet failed to produce results.

Palo Pinto County

Burton McKee Oil Corp.'s No. 5 Strawn Coal Co. had lime at 2,998-3,015 feet and from 3,013-15 feet it carried 1,000,000 feet of gas. Panhandle Refining Co.'s No. 1 Byer was dry and plugged at 1,550 feet.

Shackelford County

Sarver and others' No. 1 Elliott was abandoned as dry after a 90-quart shot at 3,555-3,660 feet revealed nothing.

Stephens County

Livingston & Wellman's No. 1 Ledbetter made 6,000,000 feet of gas at 1,972-76 feet. Texas Fidelity Oil Co.'s No. 1 Lype was dry and abandoned at 3,854 feet after a shot of 100 quarts from 3,804-34 feet and another of 150 quarts from 3,774-3,834 feet went off without result.

WEST TEXAS COMPLETIONS

Crane County

Magnolia Petroleum Co.'s No. 10 O'Keefe topped the pay at 2,935 feet and after a 130-quart shot from 2,922-62 feet swabbed 40 bbls. Prairie Oil & Gas Co.'s No. 4 State-Lasseter flowed 4,800 bbls. at 2,831-2,950 feet. Tidal Oil Co.'s No. 7 University-F topped the pay at 2,833 feet and was shot with 120 quarts at 2,840-2,925 feet, making 650 bbls. Same concern's No. 3 University-I, which was good for 55 bbls. an hour at 2,800-2,952 feet, was shot with 120 quarts from 2,848 to 2,952 feet and increased to 4,000 bbls. in 24 hours.

Crockett County

Humble Oil & Refining Co.'s No. 3 Powell-B, in the south extension of the Powell Pool, swabbed 400 bbls. from pay at 2,582-2,603 feet and when put on the pump gauged 540 bbls. the first 23 hours. This well offsets the P. H. Williams producer on the north. The east offset to P. H. Williams' No. 1 is Taylor-Link Oil Co. and Kirby Oil Co.'s No. 1 Powell, which swabbed 290 bbls. in 12 hours at 2,572-94 feet, as reported last week. On the pump it made 500 bbls. initially with no water.

Howard County

Harrison and others' No. 2 Dora Roberts pumped 45 bbls. the first day, 26 bbls. the second 24 hours at 1,874-92 feet. It is now holding up around 25 bbls. daily. Magnolia Petroleum Co.'s No. 7 Mary Chalk swabbed 42 bbls. at 1,651-75 feet.

Pecos County

Red Bank Oil Co.'s No. 1 McKenzie was plugged and abandoned at 3,512 feet. Simms Oil Co.'s No. 2 Devlin was also plugging to abandon at 1,130 feet.

Winkler County

Murchison Oil Co., Marland Oil Co. and Cranfill Bros.' No. 1 Grisham-Hunter was completed for 1,898 bbls. at 2,633-55 feet.

WEST TEXAS

Daily Average Production for Week Ending September 24, 1927

Crane County

Church-Fields-McElroy Pool

Company and Lease—	Wells	Bbls.
Church et al:		
University	1	110
Church & Weekley:		
University	3	1,800
Church & Fields:		
Duoil-University	1	158
Eastland Oil Co.:*		
University	8	12,330
Gulf Prod. Co.:*		
All leases	57	17,084
Humble O. & R. Co.:*		
University	11	5,891
Independent O. & G. Co.:		
University-A	2	827
University-B	1	1,309
Landreth Prod. Corp.:*		
Cowden-Anderson	15	13,195
Magnolia Pet. Co.:		
University-Hardwicke	8	1,939
University-O'Keefe	10	1,375
State-Lasseter	3	91
Magnolia Pet. Co. et al.:		
University	4	80
Pecos Oil Co.:*		
University	10	5,528
Prairie Oil & Gas Co.:*		
University	6	262
State-Lasseter	4	2,223
Simms & Atlantic:*		
University-A	8	5,757
University-B	1	64
University-C	8	18,806
University-D	6	4,228
University-E	1	236
Stidham & Thrasher:		
University	1	10
The Texas Company:		
University	1	235
University-Beasley	1	20
Tidal Oil Co.:		
University-B	2	84
University-C	1	41
University-E	1	90
University-F	6	4,720
University-G	2	551
University-H	2	47
University-I	2	1,025
Total Church-Fields-McElroy	187	100,116
Average per well		535

*Production partially pinched in.

Miscellaneous Crane County

Gulf Prod. Co.:		
Waddell	1	30
Independent O. & G. Co.:		
Hughes	1	6
McMan O. & G. Co.:		
Hughes	2	83
Marland Oil Co.:		
All leases	16	735
The Texas Company:		
King	9	225
Union Land-F	1	7
Total miscellaneous	30	1,086
Grand total Crane County	217	101,202
Average per well		466

Crockett County

Cromwell et al:		
Powell	3	125
Gulf Prod Co.:		
Powell	6	676
J. K. Hughes Dev. Co.:		
Powell	5	208
Humble and Marland:		
Powell	9	269
Humble O. & R. Co.:		
Sorg	1	...
Powell-B	2	143
Republic Prod. Co.:		
Powell	2	157
Roxana Petroleum Corp.:		
Powell	1	13
P. H. Williams:		
Powell	1	450
Total Crockett County	30	2,041
Average per well		68

Ector County

The Texas Company and J. S. Cosden, Inc.:		
Connell-A	1	...

Glasscock County

Texon and Marland:		
Settles	2	402

Howard County

Bristow & Merrick:		
A. J. Hooks	3	115
Comet Petroleum Co.:		
H. R. Clay	2	20
Dixie Oil Co.:		
H. R. Clay	1	9
F. H. E. Oil Co.:		
John Roberts	1	60
Godley Oil Co.:		
A. J. Hooks	1	25
Gulf Prod. Co.:		
Chalk	2	11
Harrison:		
Dora Roberts	1	25
Humble O. & R. Co.:		
Douthit	2	35
Lockhart & Co.:		
Chalk & Scott	7	98
Magnolia Petroleum Co.:		
All leases	32	1,085
Marland Oil Co.:		
All leases	32	1,170
Marland and Group 1 Oil:		
Harding	1	26
Midwest Exploration Co.:		
H. R. Clay	2	35
Owens & Sloan:		
John Roberts	1	30
Pure Oil Co.:		
Otis Chalk	4	225
Reeves & Apperman:		
H. R. Clay	2	130
Tidal Oil Co.:		
Otis Chalk	2	40
Total Howard County	96	3,139
Average per well		33

Jones County

Atlantic O. P. Co.:		
Howell	1	3
Marland Oil Co.:		
Mason	3	367

Midwest Exploration Co.:		
Thornton	4	205
Phillips Petroleum Co.:		
Tessie-Walling	4	295
Joe Winter	3	315
R. M. Beasley	1	75
J. C. Mason	1	160
H. B. Vestal	1	87
Stebbins Oil Co.:		
Higgs	1	15
Total Jones County	19	1,522
Average per well		80
Loving County		
Lockhart & Co.:		
Allen	1	20
Mitchell County		
Atlantic O. P. Co.:		
Womack	8	215
California Co.:		
All leases	95	2,685
F. J. Carey:		
E. Morrison	1	20
Eastland Oil Co.:		
All leases	9	177
Magnolia Petroleum Co.:		
All leases	22	622
Tidal Oil Co.:		
Both leases	2	27
Total Mitchell County	137	3,746
Average per well		27
Pecos County		
Allsman & Bell:		
River Bed	1	105
California Co.:		
Yates	1	933
Gulf Prod. Co.:		
M. A. Smith	1	60
Marland Oil Co.:		
Yates-A	1	955
McMan and Marland:		
Yates	1	1,125
Mid-Kansas and Transcontinental:		
Smi.h-Taylor	1	1,854
Yates-A	7	4,380
Yates-B	3	6,090
Yates-C	1	1,494
Red Bank Oil Co.:		
Smith	1	17
Texon O. & L. Co.:		
Yates	1	5
Total Pecos County	19	17,018
Average per well		895
Reagan County		
Big Lake Oil Co.:		
University	117	18,449
Texon O. & L. Co.:		
University	79	5,728
Total Regan County	196	24,177
Average per well		123
Scurry County		
Northwest Oil Co.:		
All leases	5	45
Upton County		
Amerada Petroleum Corp.:		
Hughes	6	281
Atlantic O. P. Co.:		
Sherk	1	32
Bryant & Atlantic:		
Baker	2	45
Champlin O. & R. Co.:		
Lane	1	25
Dixie Oil Co.:		
Burleson	26	2,525
Hughes	10	221
Gulf Prod. Co.:		
All leases	14	3,330
Humble O. & R. Co.:		
Burleson	4	29
Ricker	6	1,750
Independent O. & G. Co.:		
Burleson, Taylor & Wooley	26	821
McMan O. & G. Co.:		
Baker	2	25
Marland Oil Co.:		
All leases	80	2,645
Prairie O. & G. Co.:		
J. F. Lane	4	649
Allie Lane	4	1,821
Pure Oil Co.:		
Lane	1	105
Republic Prod. Co.:		
Baker	6	122
Roxana Petroleum Corp.:		
Bowen	26	2,275
Estep	3	49
Hughes	10	271
Simms Oil Co.:		
Shirley	3	50
Snowden & McSweeney:		
Hughes	1	183
Sun Oil Co.:		
Burleson & Baker	10	135
The Texas Company:		
Burleson	4	39
King	12	442
Perry	3	1,677
Texon O. & L. Co.:		
Sherk	1	13
Tidal Oil Co.:		
Hughes	1	100
Buson	1	10
Texas Pacific C. & O. Co.:		
Sherk	4	141
Lane-A	10	3,025
Lane-B	1	35
Wentz Oil Corp.:		
Sherk	3	115
White Eagle O. & R. Co.:		
Hughes	1	17
Total Upton County	287	23,003
Average per well		80
Winkler County		
Gulf Prod. Co.:		
Hendricks	1	864
Independent O. & G. Co.:		
Hendricks	1	...
Murchison Oil Co. et al:		
Grisham-Hunter	1	1,557
Pure Oil Co.:		
Grisham-Hunter	1	762
Southern Crude O. P. Co.:		
T-67 Hendricks-A	1	307
T-67 Hendricks-C	2	701
T-77 Hendricks-A	1	977
T-88 Hendricks-B	1	5,406
Total Winkler County	9	10,574
Average per well		1,175
Grand total West Texas	1,019	186,889
Average per well		183

WICHITA FALLS DISTRICT COMPLETIONS

Archer County

Barkley & Meadows and others' No. 2 Andrews was dry and abandoned at 1,104 feet. Burton and others' No. 1-B Farmer made 35 bbls. at 1,485-87 feet. McGregor and Panhandle Refining Co.'s No. 2 Farmer was also good for 35 bbls. at 1,483-86 feet. Mitcham & Hart's No. 1 Farmer was a dry hole at 1,604 feet.

Paul Trahan's No. 1 Allen was abandoned at 1,803 feet.

Cooke County

Carey and others' No. 1 Walterschied was plugged back from 1,752 feet to 1,413 feet and made 40 bbls. of oil with 50 bbls. of water from sand at 1,383-97 feet. Gray and others' No. 4 Public Park was good for 84 bbls. from sand at 1,653-78 feet, total depth 1,681 feet.

Lynch, Stahl & Burress' No. 3-A Koelzer was a 32-bbl. well at 1,629-64 feet; No. 5 Koelzer made 78 bbls. at 1,626-59 feet.

Oil Operators Trust Co.'s No. 2 Ben Luke was dry and abandoned at 1,644 feet. Sun Oil Co.'s No. 5 Hacker was swabbing 75 bbls. from sand at 1,660-63 feet and will be shot. United Producers Co.'s No. 1 Grotte was a failure at 1,604 feet.

Jack County

A. C. Parks' No. 1 Bowen was dry and abandoned at 806 feet. Reed & Neeley's No. 1 Keyser was also a failure at 1,991 feet.

Montague County

The Texas Company abandoned the locations for No. 4 Cunningham-A and No. 2 Cunningham-B.

Throckmorton County

Humble Oil & Refining Co.'s No. 1 Kirk Ledbetter was dry and abandoned at 4,323 feet. Hoffer Oil Co.'s No. 4 Matthews was estimated good for 15 bbls. at 1,504-06 feet.

Wichita County

Sheldon and others' No. 6 Frank and others-A swabbed 112 bbls. in 19 hours from sands at 1,643-54 and 1,656-61 feet, after plugging back from 1,664 to 1,661 feet. The Texas Company's No. 331 Waggoner was good for 31 bbls. on the pump from sand at 1,985-91 feet. Verschoyle & Vaughn's No. 1 Ancell-A was estimated good for 100 bbls. at 1,713-15 feet and was being put on the pump.

Wilbarger County

Milham Corp.'s No. 14 Waggoner-B swabbed 30 bbls. from lime at 2,542-49 feet and was cleaning out. Phillips Petroleum Co.'s No. 6 Waggoner-JJ swabbed 53 bbls. from lime at 2,350-63 feet and 2,442-45 feet and was also cleaning out. Waggoner Refining Co.'s No. 3 Waggoner-B swabbed 55 bbls. at 2,362-70 feet in lime. Total depth is 2,400 feet.

Young County

Continental Oil Co. and Perkins & Cullum's No. 1 Campbell was dry and abandoned at 950 feet.

MORE USES SOLUTION OF OIL PROBLEM

(Continued from Page 26)

pressed with the general industrial activity apparent in Germany. The situation there was in contrast to the inactivity which characterized certain other countries.

While not yet in a position to compete with the low-priced gasoline now obtained from crude oil, the progress made by the German scientists in the manufacture of motor fuel from coal is potentially a most important development, Mr. Buchanan said.

STILL GUESSING ABOUT THE YATES OIL POOL

(Continued from Page 26)

nearly 400 feet of relief, as mapped on the top of the lime, and this fact alone warrants the prediction that the ultimate production from its vast area will be large.

Some engineers, while not committing themselves definitely yet, believe that the Yates Pool will eventually prove to be a good "windjammer" or air-lift field. They expect to see the water encroachment spread rather rapidly to most of the structure unless the wells are kept pinched in to small openings, and after that the air-lift will be of great benefit in producing large quantities of oil by flowing a vast amount of water. This, however, seems to be looking a little too far in the future, since the present data is meager.

The general observation is that those who are seeking optimistic signs looking toward the betterment of conditions in the industry should not seize too eagerly upon this water intrusion although it has admittedly made the situation look different. If the Yates Pool oil with its high sulphur content and its marketing handicaps was a market menace before the appearance of edge water, it may still be regarded as a contender. And if any fear was felt a few weeks ago because of its possibilities, that may be transferred now to the Hendricks Pool of Winkler County where more than 50 wells are either drilling, getting ready to start, or else already shut down on top of the pay.

STRONG KEROSENE MARKET IN OKLAHOMA

(Continued from Page 20)

son, has evoked a wave of optimism which encouraged expansion programs for the following year. This cycle continued with the result a very large capacity for manufacturing gasoline has been built up. With gasoline yields running as high as 70 per cent of the crude charged to the still, one day's operation is equivalent to two days' operation previously, from the standpoint of gasoline produced, and through this development, refiners can take advantage of any market changes immediately.

Gasoline and Naphtha

A slower movement of the higher gravity gasolines and a tendency for a slowing up of the movement of U. S. Motor gasoline, characterized the market in Oklahoma this week. Prices remained unchanged as refiners were unwilling to take lower prices for their products. The shortage of 375 endpoint gasoline and 360 endpoint refinery gasoline last week did not extend over into this week as might have been expected with the coming of colder weather.

Higher Gravity

Some refiners report sales continuing unchanged on all grades, but point to the higher cost of natural gasoline as having a tendency to make the manufacturer of the higher gravity gasolines unprofitable at the present quotations. With refiners unlikely to lower the price on the higher gravities without getting a reduction in the natural gasoline market the future of this market is problematical. Some talk of 6-cent U. S. Motor gasoline was heard over the past few days but none of it could be located and the volume could not have been more than a few cars and did not represent the general market price.

Naphtha remained unchanged and continued to move slowly as the blending of natural gasoline and naphtha proved unprofitable in competition with refinery gasoline. Special naphthas, such as painters naphtha and cleaners naphtha, are usually moved at a price differential based on U. S. Motor gasoline and the small quantity of these moved in comparison to the volume of other petroleum products causes that market to become localized. The manufacture of these naphthas has been confined to a relatively few plants and the ordinary grades are being manufactured at only a few plants in Oklahoma so from a quantity standpoint this market has gradually become of lesser importance.

Kerosene and Distillates

Refiners reported an excellent movement of kerosene and some were expected to increase their prices if the present movement continued. The 41-43 grade was generally traded at 4¼ to 4½ cents the same prices that prevailed last week, but refiners who were quoting 4¼ cents were expected to go to 4⅜ cents shortly. The 42-44 grade was relatively scarce and refiners were demanding 4½ cents as a low price for it. Some of it sold for 4¾ cents and prospects of still higher prices were dampened only by the relatively low gasoline prices. Any further strengthening of the kerosene price would induce refiners to widen their kerosene cut and its production could be doubled within a week at most plants. The improved export market and the high domestic demand occasioned by the use of tractors in the farming regions for fall plowing accounts for the present strength and unless prices are raised to the point where refiners cut a portion of their gasoline streams into kerosene and thus add materially to its production, a very stable kerosene market seems probable for several weeks to come. As refiners increase their production of furnace oil, less of the 41-43 grade will be made and this grade will probably gain added strength faster than the higher gravity, over the next week.

Fuel Oil and Gas Oil

Continued dullness in the fuel market was apparent and although the prices remained unchanged, there was only a fair movement. The coal strike has not affected this market and the coming of cold weather has not made fuel oil any more popular. As oil gains a foothold in replacing coal, it seems that oil is replaced in part by water power or natural gas in turn. The prospects of using oil for household heating promises the best future for increased consumption and although the industries may not turn to oil as rapidly as has been the case in the past, the railroads will probably always prefer oil fuel, for passenger service at least, and will always take major portion of the fuel production. Higher gravity fuels did not show the strength evidenced a week ago but there was no change in prices.

Gas oil continued weak with no change in price. Some of the low cold-test, low flash material sold at an eighth above the regular quotations but this oil was intended for use as a cheap furnace oil. With cracking operations paying only a fair return, there is no probability of a general strengthening of gas oil prices until the gasoline market is improved and that does not seem likely for the immediate future.

Lubricants and Wax

Refiners were reporting a constant movement of lubricants and the relieved situation on the Gulf Coast has tended to hold prices constant here. Wax was generally strong and continued to move up an eighth of a cent in price. Quotations were sent out asking for 3 cents in some instances and the general tone of the market is firm.

PETROLEUM EXPOSITION SURPASSING DISPLAY

(Continued from Page 21)

Drake well "let go" the band played "America" while the crowd stood with uncovered heads.

Takes Days to See It All

This vast show cannot be seen in one day, nor could it be done justice in less than a week's time if every exhibit is to be visited and given the study and attention it deserves. It is a tremendous showing of essential materials used in the oil business and it is estimated that their market value all told would reach $10,000,000. The immense Texas and Oklahoma Buildings and the Scientific and Technical Building house most of the exhibits, but the arcade between the Oklahoma and Texas Buildings is filled with interesting features while the out-of-door display of derricks, well drilling and pumping equipment, ditchers, tractors tank wagons, engines, compressors, drilling machines, trucks, etc., is a great show in itself. All the companies and firms represented at the show have men at the exhibits to explain and advise and to answer all questions relating to the products shown. In another part of this edition is a complete list of all the exhibits, where they are located and the names of those in charge of the exhibits. It tells the story of the tremendous scope of the show.

First Aid Contest

One of the features of the opening day was the first aid contest for which prizes were offered by the Mid-Continent Oil and Gas Association. This was held indoors because of the inclement weather. The first aid team of the Empire Refineries,

Inc., Cushing, Okla., won first prize with a perfect score of 600 points. Sixteen teams, representing the Empire, Skelly, Sinclair, Marland, Phillips, Mid-Continent, Tidal, Transcontinental, Barnsdall, Louisiana, Gypsy, Roxana and Humble companies took part in the contest.

Second and third prizes were won by the Marland team with 599 points, and Sinclair team with 598 points.

The names of the winning teams were: Empire—John H. Acker, captain; W. H. Craig, O. F. Taylor, Carl Humphreys, W. E. Thomas, Valnes Young.

Marland—R. A. McGrew, captain; Bob Green, Floyd Elliott, Ray Clothier, Roscoe Bullard, James Tallman.

Sinclair—Ben E. Weatherman, captain; James Parker, Sidney Stevens, William Earhart, Farral Thomason, Jess Smith.

The committee in charge of the first aid contest had D. M. Wallace for its chairman. C. A. Herbert, of the United States Bureau of Mines, was chief judge, assisted by a group of practical oil men. A. V. Bourque, secretary of the Association of Natural Gasoline Manufacturers, presented the silver cups emblematic of victory.

Oldtimers Gather

J. Alex Stephenson, of Tulsa, 81 years of age, and an oil man since 1860, won the John D. Rockefeller gold medal as the oldest oil man in point of service present on Oldtimers' Day at the exposition Monday. Fourteen veteran oil men, all of whom came into the business in the sixties when Pennsylvania was the only oil producing state, gathered Monday morning for registration and all were present in the afternoon when the presentation of the gold and bronze medals took place. The veterans were J. Alex Stephenson, 81, of Tulsa; John A. Champion, 77, Tulsa; John W. Dwiggans, 75, Tulsa; Thomas D. Farrell, 79, Tulsa; Henry Aggers, 83, Ranger, Tex.; Phillips Kleckner, 84, Skiatook, Okla.; F. M. Kleckner, 75, Skiatook; Mike McCool, 77, Hominy, Okla.; Leonard L. Beatty, 82, Tulsa; J. H. Waggoner, 87, Tulsa; H. V. McGivern, 64, Tulsa; J. C. McBride, 74, Amarillo, Tex.; A. W. Gordon, 80, Tulsa, and Ed Fowler, 78, Tulsa. Every one of these veterans, all of whom have worked in the oil fields of several states and some of them in foreign fields, was in sound health and went through a strenuous day of social activity which closed with a banquet in the Mayo Hotel, where they were the guests of William G. Skelly, president of the exposition. With the exception of Mr. Stephenson, the gold medalist, all received bronze medals emblematic of long and honorable service in the industry.

The Rockefeller silver medal to be awarded to the oldest living oil man in active service will likely go to Jacob Sheasley, of Franklin, who is 93, and still active as a producer. He has been in the business since 1864.

Lindbergh Day Friday

The biggest added feature of the show in the last half of the week will be the opportunity to see Col. Charles A. Lindbergh, world famous flyer, who is expected to arrive in Tulsa about 2 p. m. on Friday. Later in the afternoon Colonel Lindbergh will deliver an address outside the exposition grounds and there will be a banquet in his honor in the evening.

The Mid-Continent Oil and Gas Association had originally scheduled its annual banquet for Friday evening, but, owing to the importance of Colonel Lindbergh's visit and the desire of all parties that he be given a thoroughly representative audience, the association joined with the city officials, the Chamber of Commerce, the petroleum exposition and the National Aeronautical Association in arrangements for a Tulsa-Lindbergh banquet. Reservations for the banquet from representative men of all lines of business are now being accepted.

The program for the banquet will include addresses by James A. Veasey, general counsel of the Carter Oil Co.; Prof. Josh Lee of the University of Oklahoma; Mayor Newblock and Colonel Lindbergh. N. A. Gibson, of the firm of West, Gibson, Sherman, Davidson & Hull, will preside as toastmaster. The theme of the addresses will be oil and aviation.

One hundred and twenty oil men entered the petroleum exposition golf tournament at the Tulsa Country Club. The qualifying rounds were played Monday and Tuesday and the real contests will be played later in the week.

On Saturday at 3 p. m. a tug-of-war contest is scheduled on the exposition grounds which will bring together in friendly rivalry the brawn representing Mid-Continent oil companies.

The Mid-Continent Oil and Gas Association will hold its annual business meeting and election of officers in the Cosden Building Friday at 2 p. m.

The exposition will close Saturday night.

The weather in the first four days of the show was most unfavorable. It rained every night and at times throughout each day, but while this kept down the general attendance it did not dampen the enthusiasm of the dyed-in-the-wool oil men who look upon the exposition as the ideal place to find the things needed in the business. Considering the inclemency of the weather, the attendance has been large and exhibitors were pleased to find that it was a buying crowd—that is, made up largely of men who influence the purchases of oil companies and firms.

STANDARD OF INDIANA MEETING IN CHICAGO

(Continued from Page 173)

refinery, spoke on "Option A of the Stock Purchasing Plan—Its Effect on Length of Service." The closing address was by H. F. Thorstenson, head of the voucher and billing division, Chicago, "How and What Can Be Done to Promote Greater Co-Operation Among Individuals and Departments?"

The dinner followed shortly after the close of the afternoon session and included in addition to the delegates about 60 officials and department heads. C. L. Rose, an electrician and employes' representative from Casper, acted as toastmaster. Chairman R. W. Stewart and President E. G. Seubert spoke. Each in a general way recognized the great benefit to the organization as a whole and to the employes and management which had resulted from the nine years of activity of the Industrial Relations Plan and spoke of the continued and greater good that could be logically expected to come from the steady progress of the plan and the even greater harmony and fellowship that was certain to increase with each added year of its operation. Brief replies were made by Clifford L. Miller, pumper, Casper; Leo McDonald, boilermaker foreman, Greybull; Ed L. Wood, carloader, Laramie; L. G. Harrison, stillman's helper, Sugar Creek; Charles F. Daily, fireman in pressure stills, Whiting; William Kelley, motorman, Wood River; H. W. Ringrose, buyer in purchasing department, Chicago. In general interest and understanding of the aims and methods of the plan each year shows a decided growth over the preceding year.

THE MORROW SELECTION

WASHINGTON, Sept. 24.—The selection of Dwight W. Morrow as ambassador to Mexico is regarded as hopeful for adjustment of the petroleum controversy with the Calles administration.

"President Coolidge," said one observer familiar with the oil dispute, "could not have selected a better man to straighten out the Mexican situation. With characteristic thoroughness, the President drafted one of the best business brains in the country, as well as his closest adviser, to adjust Mexican affairs. The selection should be a notice to Mexico that this country is giving her an opportunity to straighten out on sound business lines the various Mexican questions. By his choice of Mr. Morrow the President is doing all he can not to leave the Mexican muddle for his successor in office."

VIEWS OF POSSIBLE LEGISLATION ARE EXPRESSED BY W. C. TEAGLE

President W. C. Teagle of the Standard Oil Co. of New Jersey says the next session of Congress will see the introduction of one or more bills to give the Federal Government a voice in the conservation of petroleum. Whether the projected legislation will pass is one thing, and whether, if enacted, it can stand the test of constitutionality is quite another. Eminent legal authorities believe that the Federal Government cannot regulate oil production without an amendment to the Constitution.

"In the meantime," Mr. Teagle continued, "conservation must rest in the hands of private interests. The production of crude oil is peculiarly difficult of control. Because of its more or less fugitive character, oil is not like other timber or coal resources, which are fixed in position and remain indisputably the property of the owner of the ground. If the surface overlying an oil pool be owned by half a dozen people, any one of them, if not interfered with, can recover not only his own share of the petroleum but also part of that under his neighbors' land when a wildcatter opens a new pool. All the land adjacent but not under his control is promptly drilled up by others.

"This competitive race to bring the oil to the surface has certain recognized evils. It means too many wells in a given area where the land is held in small parcels. One of the best illustrations of that was furnished by Long Beach, Calif., where derrick almost touched derrick. Also, it may mean a sudden great increase in the current production at a time when it is not needed. Throwing a heavy burden on the industry to provide storage. This phase of the situation has been unfortunately exemplified in Seminole.

Voluntary Agreements

"All the operators in a potentially large new producing area might enter into a voluntary operative agreement for systematic development along the most efficient lines. Due regard would be had for the current demands and for the most efficient methods of recovering the oil from the pool at the minimum cost. In place of a mad race, co-operation would mean a proration of production and expenses among all the owners. But this co-operation would have to be voluntary to succeed. It would hardly be possible to accomplish it by the law's compulsion without violating the owner's constitutional rights. That is to say his common sense may lead him to do a thing that he would resist with might and main if driven by an executive order.

"The producers at Seminole have placed themselves under the jurisdiction of an umpire appointed by the Corporation Commission to work out a practical conservation program. Results were not immediate. Due to lease obligations, wells drilled in had to go on producing and those drilling had to be completed, but regulations against further drilling were promulgated and proved successful. A proration plan is being discussed in West Texas, where, but for voluntary action, there may be overproduction this winter.

"The real waste incident to the producing business is less than the public believes. None of the oil produced at Seminole when the country was amply supplied already has been wasted. The loss is one of money and not the commodity. When the industry is carrying an excessively large surplus it is economic waste to add to it. Nevertheless, economic waste is less of an evil than real waste, and the purchasing companies have had to take all the petroleum even though its storage involved financing and the construction of additional tanks. Then, too, lowering prices mean a certain amount of uneconomic consumption through displacement of more plentiful coal.

Test of Price

"Conservation does not mean locking up our petroleum reserves for possible needs a long time hence, but the most economic utilization of these resources today. Producers and refiners have made great headway along this line. The best evidence is that despite rapidly mounting costs the price of gasoline remains low and has not materially increased over the prewar level. Furthermore, there never has been a time that the industry has not been ahead of the nation's requirements."

"It is easy," Mr. Teagle says, "to believe that relief may be had through legislation for the condition of overproduction which has burdened the oil industry. It seems a simple matter to incorporate into law recommendations made by the President's Oil Conservation Board or other experts who have familiarized themselves with the problem.

"Whether or not the United States Constitution empowers congress to legislate on the regulation of drilling operations is at best a moot question.

"Entirely aside from that important consideration, it is a serious question if legislative control of production would not work more harm than good. The more familiar one becomes with the peculiarities of this business, the more hopeless it appears to attempt to foresee future developments and to regulate them by statute. The law cannot allow latitude to enforcement officers to exercise their judgment according to the circumstances of each in which it is invoked. In the past it has proven too rigid to fit unforeseen developments.

Difficulties in Legislation

"How, for instance, could legislation have been framed which would adequately have met the overproduction situation that has developed practically within the past year in the big Seminole Field. New conditions never before experienced created there a problem that could not have been handled by law drafted on the basis of our experience in other pools. Nor would the regulations which might prove successful at Seminole fit the situation in the Little River Field just coming into prominence.

"At Little River it was agreed that the first well into the oil sands should be allowed to produce to capacity, which was about 10,000 bbls. a day, until the second well was completed. After that, each well was to be allowed to flow to capacity for three days, after which all of them would be shut in to 100 bbls. a day. A curtailment had worked fairly well at Seminole near by, but when an attempt was made to close in the Little River wells to 100 bbls., some of them promptly went dead. Experienced operators decided that a varying rate of flow was essential for the success of different wells. One of them might be pinched in to 100 bbls. and continue to flow, while another might not be susceptible of economic control, unless 600 or even 1,200 bbls. of oil a day were produced from it. The presence of water near the oil sands introduced a very delicate complication. The discovery well, for instance, went to water after producing about 700,000 bbls. of oil.

Little River Situation

"While the operators of the Little River Field were working toward a solution under the agreement they had signed, with the approval of the corporation commission of Oklahoma, royalty owners asked the district court for an injunction to restrain the operators from restricting the production of the wells, alleging injury if this were done. The corporation commission, on the other hand, had issued its order to conserve the oil, and it was believed by the oil men that no royalty owner could be hurt so long as offsetting wells were not allowed to drain from his property. The question has gone to the state supreme court. The matter is complicated by the rights of the royalty owners. If the commission is overruled, interesting light will be thrown on the possible fate of legislation if an attempt be made to control production.

"The experience in the flush pools of both Oklahoma and Texas, where the operators have met with state officials for a frank discussion of remedies, indi-

cate very clearly the good faith of the industry in its wish to encourage conservation. This success already obtained through voluntary co-operation proves, to my mind, that relief from present overproduction must be sought and gained in this manner, and not by an arbitrary regulation promulgated under statutes which, even if eventually adopted and held constitutional, can hardly correct the situation until after the flush production of today has passed."

Late Fields

(Continued from Page 30)

August 27 and has made a total of about 1,400 bbls. according to owners.

Simms Oil Co.'s No. 1 Smith in Pecos County flowed 160 bbls. hourly at 1,376 feet.

OKLAHOMA

The Little River Pool of the Greater Seminole Field was subjected to a test on Monday of this week when the leases were thrown open at different periods of the day. The test was for the purpose of obtaining some definite idea of the pool's production, and it is estimated that at this time there is approximately 50,000 bbls. daily production in the pool. The output for the 24 hours ending Tuesday morning at 7 a.m. was 39,018 bbls. from the 15 wells.

On Tuesday of this week the output of the Greater Seminole area was increased to a total of 460,847 bbls. from 830 wells. The oil was divided as follows:

Bowlegs	140,001
Little River	39,018
Earlsboro	180,878
Seminole	71,137
Searight	29,813
Total	460,847

The Little River Pool is cut off to the northwest by the failure of the Gypsy Oil Co.'s No. 1 Wissy Wakkie, SE cor. NE SW Section 35-8-6, which found a hole full of water in the Wilcox at 4,285-92 feet. The productive limits of the pool were carried to the north by the Gypsy Oil Co.'s No. 1 Pottey, SW cor. NE NE Section 35-8-6, which started flowing 100 bbls. hourly from the sand at 4,320-25 feet. The well went dead after flowing for five hours, and when the tools had been run to agitate it, came back flowing 80 bbls. hourly. The H. F. Wilcox Oil & Gas Co. and the Amerada Petroleum Corp.'s No. 1 Fore is a west offset to the Gypsy well, and it is reported running about 90 feet higher than the former well.

The Blackwell Oil & Gas Co.'s No. 5 Nitey, SE cor. NE SE Section 35-8-6, is a new well and made 3,888 bbls. the first 18 hours from sand at 4,128-36 feet. Blackwell's No. 2 Nitey was drilled 2 feet deeper to a total depth of 4,182 feet. The top of the sand in this well was 4,156 feet.

Half a mile east of production in this pool, the Gypsy Oil Co.'s No. 1 Campbell, SW cor. NW SE Section 36-8-6, has a showing of oil in the Wilcox sand at 4,416-20 feet. The hole filled up 2,000 feet with oil.

The production by leases of the Little River Pool, during the day when the wells were flowed wide open part of the test period, shows:

Company and Lease—	Wells	Prod.
Blackwell Oil & Gas Co.:		
Nitey	4	11,715
Gypsy Oil Co.:		
Pottey	1	2,105
Indian Terr. Ill. Oil Co.:		
Dungan	1	2,415
M. A. House	1	4,315
W. E. House	1	677
Jackson	1	2,685
Nitey	2	7,360
Reed	1	2,691
Mid-Continent Petroleum Corp.:		
Wadsworth	2	2,765
Prairie Oil & Gas Co.:		
Dungan	1	2,290
Total	15	39,018

2 Cedar Creek Wells Have Stopped Flowing; 2 More Completions

MEXIA, Tex., Sept. 26.—The discovery well in the Cedar Creek Pool, southwest of Mexia, went dead today. It is Reiter, Lewis and others' No. 1 Ward. Cable tools will be rigged up and an effort made to swab the well back to the producing stage. No. 2 Lewis of the same operators is swabbing 102 bbls. a day. The Why Not Oil Co.'s No. 1 Lewis, the second well in the field, which was reported in on Saturday good for 800 bbls. a day, went dead this morning and the crew was rigging up a standard outfit for the purpose of rescucitating it. This well has sand at 2,891-97 feet. The Transcontinental Oil Co.'s No. 1 Lewis was swabbing 300 bbls. a day from sand topped at 2,893 feet. The same company's No. 1 Ward swabbed 300 bbls. a day from sand at 2,885-89 feet.

The Rycade Oil Co. set pipe on top of sand at 2,897 feet and the Transcontinental Oil Co. set pipe at 2,885 feet and its No. 1 E. W. Lewis set pipe at 2,897 feet.

Ben Hunt and others' No. 1 A. K. Priddy, drilling on another faulted structure a little southeast of the Cedar Creek area has both gas and oil showing but not sufficient to make a well. It was reported drilling at 3,040 feet.

In Anderson County Cosden and others' No. 1 Douglas was drilling at 4,246 feet; Humble Oil & Refining Co.'s No. 1 J. H. Russell drilling below 2,930 feet; same company's No. 2 Spencer Clemons drilling at 2,990 feet.

In Cherokee County the Humble Oil & Refining Co. has abandoned No. 2 Earl & Ragsdale at 4,566 feet and was drilling No. 2 Elliott & Clark, Windsor Survey at 2,675 feet.

COMMISSION PRORATES LITTLE RIVER OUTPUT

The Oklahoma Corporation Commission late Tuesday issued an order limiting the production of all wells in the Little River Pool of the Seminole Field to 75 per cent of their potential production.

This order came as a result of a series of conferences held by the officials of the companies interested in this area, and is expected to strengthen the Mid-Continent crude situation, as under its provisions the combined output of the Seminole Field will again be less than the 450,000-bbl. figure which was previously agreed upon.

All the companies operating in the Little River Pool have signified their intention to abide by this ruling, and the potential production of the pool is now estimated at 50,000 bbls. With 37,500 bbls. daily of permitted production in Little River, the Seminole Field as a whole should produce close to the 450,-000-bbl. mark, but an official of the Corporation Commission Tuesday remarked that if the output of the field should exceed that figure by any appreciable amount, another order possibly would be issued placing further reductions upon the Little River wells.

URGES CO-OPERATION IN FOREIGN FIELDS

Great Britain and the United States will lead in development of the world's oil supply and the extent of co-operation and fairness they show will largely determine whether the world's oil supply shall be developed in the interest of peace or war, according to an article by Albert D. Brokaw, New York oil engineer, in the October issue of Foreign Affairs.

In presenting a picture of what may happen within the next decade, Mr. Brokaw points out that the United States controls production within its own borders and shares with Great Britain control of the Caribbean, while the British sphere of influence extends over the Black Sea-Caspian Field. He makes the following forecast of the relative annual production of the world's principal oil fields for the next 10 years:

United States, 500,000,000 to 600,000,-000 bbls.; Venezuela and Colombia, 150,-000,000 to 200,000,000 bbls.; Russia, 100,000,000 to 150,000,000 bbls.; Persia and Mesopotamia, something over 100,-000,000 bbls.

"Thus it seems that even though the rates of production in the various countries change substantially it is likely that the world situation will be dominated by America or Great Britain, especially as Britain and America are the dominant financial powers of the world and the oil industry is firmly intrenched in each," says Mr. Brokaw.

"As a result Britain or America, or both together, will have to do with oil development in one country after another, as the focus of operations shifts from time to time; one or both will be involved in legal and diplomatic tangles that may arise, and the extent of co-operation and the fairness they show will determine to a large extent whether the control of the world's oil supply shall be in the interests of peace or of war.

"We may look with more or less equanimity upon a trade war between two American companies, but a trade war in the oil industry between a powerful British group and a powerful American group holds within it the possibility of a struggle for dominance of control over the supply by the nations themselves, and that is, unfortunately, more serious. There is, of course, the alternative possibility of a combination, or some sort of co-operative arrangement between the great competitors in the field of petroleum; if this can be effected under proper control the danger of serious tension will be materially lessened."

NOTICE OF SALE

Plant and Equipment of Louisville Petroleum Refining Co., Bankrupt, to Be Sold October 8, 1927.

In the District Court of the United States for the Western District of Kentucky In the matter of Louisville Petroleum Refining Co., bankrupt. In bankruptcy.

Notice is hereby given that Frank B. Russell, Trustee in Bankruptcy of the above named bankrupt, will offer for sale on October 8, 1927, at 2 p. m., at the office of the Louisville Petroleum Refining Company, the following described property, to wit:

The entire plant, equipment and stocks on hand, now located on the property; the entire tract of ground, located on Western Parkway between the Parkway and the Ohio river, containing approximately forty-one (41) acres of ground, on which is located all of the property and equipment herein described. This plant is served by sidetracks from the Kentucky & Indiana Terminal Railroad Company. Located on the property are the following items of equipment:

Twenty-two (22) large steel oil tanks.
Two (2) agitators.
Two (2) units of Dubbs cracking plant and equipment connected therewith.
One (1) re-run still.
Four (4) skimming stills.
One (1) continuous treating still.
One (1) flash still.

Also all buildings of every kind and description now on said ground, and all other machinery, tools and equipment therein or thereon and not herein specifically described, belonging to the estate of the above named bankrupt.

In addition to the above, there is in stock a quantity of crude oil and gasoline and other products, including coke, and chemicals which will be sold along with the plant.

No bid or bids will be approved by the Court which do not realize a minimum of $225,000.00 for the property as a whole, and said property will be sold subject to confirmation by the Court.

A deposit of $15,000 is required of all bidders.

For further particulars, terms, etc., write, telephone or telegraph.

FRANK B. RUSSELL, Trustee
United States Trust Bldg. Louisville, Ky.

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Worthy of your confidence. General machine work. 1416 Walnut, Kansas City, Mo. Phone Harrison 7660.

MACHINE WORK — CASTINGS
Machined to your drawings, Gears, Machinery designed and built. Modern Facilities—Prompt Service Reasonable prices. Send for our booklet. GENERAL ENGINEERING AND MFG. CO., ST. LOUIS, MO.

RANCHES AND FARM LANDS

TEXAS-NEW MEXICO
Ranches and business property. If I don't have what you want I will find it for you. Chas. Stallings, Clyde, Tex.

SHACKLEFORD CO., TEXAS ranch for sale; 3 sec. on paved highway. Good geology and production in every direction. Not leased for oil. Must raise some cash. Owner, Box 507, Albany, Texas.

FOR SALE OR TRADE by owner, 735-acre dairy farm and cattle. Six miles north of stockyards. Not an ordinary farm, but a live, paying business. C. M. Oliver, 1305 Main St., Fort Worth, Tex.

RANCHES FOR SALE

We have had 40 years active experience in selling ranches. We know the ranches, know the owners of most of them, know relative values in different localities. If in the market for a ranch write us; it will, at least give you the benefit of contrasting what we offer with other propositions.

Just now we are stressing a wonderfully fine ranch of 126,000 acres, well improved, abundantly watered, splendidly grassed fronting on a railroad. It is a going concern, stocked with high-bred cattle. This ranch is offered for $6 per acre on easy terms. All mineral rights go with it. Write for particulars as to this, or write us what will interest you. Address

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OKLAHOMA farming land bargains, 40 to 1,000-acre tracts in coal, oil, gas belt; $5 to $25 acre, come investigate. John Cavanagh, McAlister, Okla.

TEXAS INVESTMENTS

50,000 acres Webb County cattle and sheep ranch, fenced, watered, open prairie and mesquite, 80 per cent tillable, Full mineral rights go, only $8 per acre.

20,000 heart of Winter Garden, Zavalla County, fenced sheep proof into pastures, extra well grassed, good house, electric lights, waterworks, telephone, bearing orchard, sheds, barns, etc. Bargain at $11 per acre. Full mineral rights.
TALBOT-DAVIS LAND COMPANY
622 Gunter Building,
San Antonio, Tex.

80 ACRES OR MORE fine irrigatable Winter Garden land. Cheap. Owner. 709 Central Trust Bldg., San Antonio, Tex.

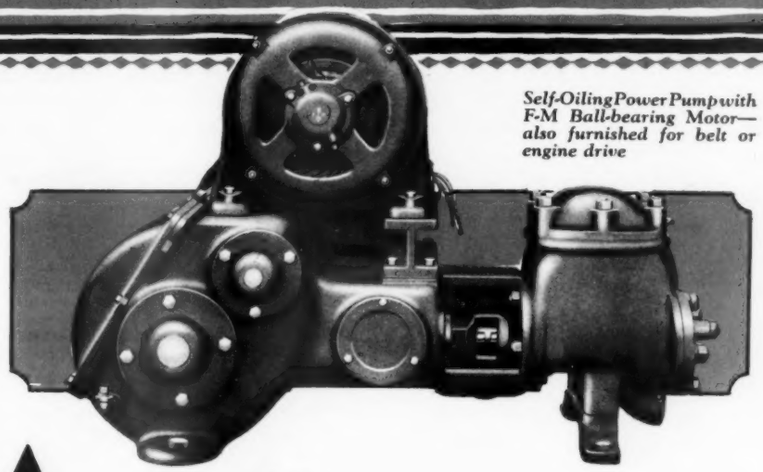
TEXAS RANCH
40,000 acres, near Houston, $12 acre. Box 653, Kansas City, Mo.

REAL ESTATE

KANSAS CITY, MISSOURI
For sale six-story steel and concrete apartment hotel and business building on very prominent corner; elegantly furnished throughout. Annual income over $90,000; expense, $16,500. A safe and sound investment with large net income. For particulars address Box C-45, The Oil and Gas Journal, Tulsa, Okla.

FOR SALE—Colorado modern home, 9 rooms, gray stone house, mountain water, excellent location. Bargain for cash. P. O. Box 87, Florence, Colo.

ATTENTION REAL ESTATE DEALERS
I own 365 acres partially in, overlooking and adjoining the city limits of Jacksonville, Texas, the new oil town in Cherokee County. Ideal for a large townsite proposition. Priced to sell. F. E. Churchill, Jacksonville, Texas.



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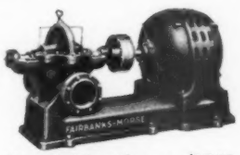

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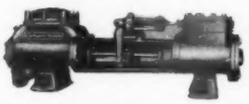
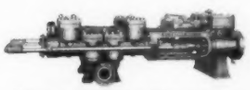


Duplex Piston Pattern Steam Pump for general service.



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Every Fairbanks-Morse pumping unit is built with a full measure of useful life. This is in part due to seasoned design. In part due to high quality material standards. In part due to "proper tolerance" construction and thoroughgoing craftsmanship. In part due to Fairbanks-Morse manufacturing facilities and unmatched testing laboratories for proving every pump before it leaves the factory.

Long useful life in the service for which the pump is recommended is, in short, the guaranty of the sum total of Fairbanks-Morse pump building methods. Look into the record of any F-M pump in oil industry service and be convinced of this!

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3. Ball bearings require greasing only once or twice a year—practically self-oiling
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6. Extra heavy shaft to withstand undue belt tension
7. Moisture-proof insulation
8. High starting torque with low current consumption
9. Fourteen speed variations between 25 per cent and full speed
10. Reversible interlocking controller with overload protective relays, providing complete control from the "headache post"

FAIRBANKS-MORSE

Pioneer Manufacturers of

ball bearing motors

AEPA02.4

Advantages of Contact Filtration

Better Lubricants of All Types at Lower Costs Claimed for Process. Possible to Utilize Old Equipment

By E. C. Bierce,
Consulting Engineer, Western Clay and Metals Company, Los Angeles, Calif.

The term "contact filtration" has come to be very generally adopted as signifying the use of fine clay at generally elevated temperatures on oils or waxes, either neutral or in the acid state. By "acid state" we mean an oil that has been treated with acid, and from which the tarry asphaltic acid sludge has been nearly all removed, but in which there is some acid still left in suspension.

The term probably came into use to signify that there was a more intimate contact between the oil and clay than was obtained in the percolation system. It has the merit of brevity, and while not really descriptive of the process, will serve better than a longer and more truly descriptive term.

A study of the patent office records in this and foreign countries and of technical publications and treatises shows that the use of fine clay on oils either neutral or in the acid state, was well known and practised as far back as the middle of the nineteenth century. For example, the specifications and claims in British Patent No. 2356, 1868, covering the use of fine clays on oils either neutral or acid, read in all essential details as a description of present day contact practice would read. This patent even goes so far as to outline the reduction of distillation of crude, either with or without a preliminary acid treatment, in the presence of fine clay, a practice that we believe will become increasingly popular.

Better mechanical methods and equipment, such as filter presses, etc., pumps, heat exchangers and other factors have united in making the contact process more profitable than it was in the nineteenth century. To use a much-abused expression, the contact process is now coming into its own. Apparently we know no more today about the reactions, the physical and chemical changes taking place in the application of fine clay at high temperatures than did the first advocates of its use in 1868 and later dates, but mechanically we are so far ahead of the refiners of those days that the logical manner of using clay or earth, i. e., in its finely divided state, no longer presents the difficulties it formerly did.

Advantages of Clay

Let us now examine a few points in which economy is obtained by the use of fine clay.

1. Practically all oils may be treated while in the acid state. This does away with the use of water and alkali, and the time and expense in connection with their use.

2. One man will handle an entire batch, whether of 50 or 1,000 bbls. He can apply the clay, heat the batch, and pump same through filter press. In this connection, in the treatment of cylinder stock or long residuums, which must be cut back with naphtha for the purpose of dewaxing, the filter press operation can and may to advantage be done away with. The alternative is to take advantage of the fact that fine clay settles very readily from a naphtha solution, due to low viscosity of same. In practice the blended stock is run to a large settling tank and allowed to stand for from 10 to 12 hours. The clay will settle very compactly and the nearly clear solution is withdrawn by swing line and passed through 18 or 20 inches of coarse fuller's earth or sand for clarification. Several batches may be run to the settling tank and when sufficient clay has accumulated on the bottom of this tank, bottom open steam is introduced through a grid of steam lines with which the tank is equipped. The naphtha conent of the clay cake will thus be removed overhead, and with it a large amount of the stock contact of the cake, which is mechanically carried overhead with the wet vapors of steam and naphtha. Oil losses by this manner of removing the clay compare very favorably with those incurred in using a filter press, and its operating costs are lower than by press. The steamed clay is pulped with water and steam to thin mud and will flow or may be pumped from the tank to waste.

Handling Clay

3. Fine clay is very easily handled around a refinery, the best way being to pipe it under air pressure. This manner of handling should not be confounded with the use of a blower, which latter is hard to control, and involves dusting losses, etc. Some have failed in attempts to use compressed air with clay because of faulty equipment, but the layout is very simple and fool proof.

4. Time is very important to any refinery, and the speed with which a batch of any size may be finished to color is a decided advantage.

5. This system produces a uniform color throughout the batch, and the oil does not grade off from an undesirably high color to one in which no color has been removed.

6. Economy results to the refiner because oils made by this system uniformly show a higher viscosity than those made by percolation through coarse earth. Viscosity is gained rather than lost. Particularly is this true if the oil is treated in the acid state. If there is to be no alkali treatment in most cases the refiner may cut down the amount of acid used, because it has been our observation that generally speaking the use of an alkali sets dyes in the oil which are difficult to remove later. The less acid one uses, of course, the less will be the drop in viscosity. In addition to this, fine clay of the proper quality will in itself either maintain or raise the viscosity of an oil. Coarse fullers' earth, on the contrary, invariably causes a drop in viscosity.

Use of Old Equipment

7. In the case of a refinery that has a gravity filtration plant in commission, a large part of this equipment may be utilized for a contact plant. Old gravity filters make good mixing tanks, and if very high temperatures are not to be used, will also serve as heaters. If high temperatures are to be used, a pipe still is desirable, or superheated steam will serve, but in almost any case, the old gravity filters are useful. The mistake should not be made, however, of trying to get by with unsuitable equipment. Most cases that we have observed in which the maximum was not being obtained from the fine clay were due to faulty equipment, attempting to avoid any expense at all in the installation of the contact plant. On the other hand, a complete new contact plant may generally be installed at one-fifth or less the cost of a percolation plant with the same capacity.

8. Compactness of plant. This is a matter of real economy, for it is possible to install a contact plant in one half or less the space covered by a percolation plant of the same capacity.

9. A much better oil is obtained from the contact system than where alkali is used. The introduction of an alkali into any hydrocarbon always causes the formation of certain oil soluble compounds, which it is difficult or in many cases impossible to remove later. These compounds, saponaceous in character, impair the quality of the oil, and in addition, the alkalis themselves are to a certain extent soluble in oils, and a small amount of free alkali will often remain in the oil after filtration.

10. Generally speaking, if a wax distillate is acid treated and then clay treated, the wax will be in a condition to press. This obviates the necessity of cracking the wax distillate.

Other Advantages

Contact filtration appeals to the scientific refiner because it is susceptible of accurate laboratory control. Given a fine clay of uniform quality and moisture content, which in the past has been rather difficult to obtain, the refiner knows from day to day what to expect. There is never any figuring to be done as to the amount of oil to a given color a filter tank will give, how many times it has been burned, etc. Twelve to twenty-four hours will suffice to make up a shipment to any color.

The above remarks on settling out clay from stock in solution must be understood to apply to stock or long residuum only. In the case of neutrals or overhead distillates, a pressure filter of the Sweetland or Kelly type is thought by many to be the best, although many refiners use the plate and frame filter press with a closed discharge with success. A closed discharge is necessary because most refiners will filter their viscous oils at nearly 300 degrees Fahrenheit, cooling after emerging from the filter press. The oil must of course be kept from contact with air until it has been cooled to a point at which losses of color on standing are found to be at a minimum. This varies from 125 degrees Fahrenheit to 180 degrees Fahrenheit and the proper temperature must be determined in each case. It must be hot enough to permit the small cloud of water vapor that will always condense in the oil to pass off. This water cloud will in some cases pass off itself if the oil is left standing in open top tanks, and in other cases it is necessary to give a short blow with air to brighten the oil.

A thorough agitation of the oil and clay is required while the mass is being raised to the proper temperature. There is no better way, in our opinion, to obtain this mixing than by the old well-known method of circulation through pump, and back to tank. One may pass through a heat exchanger (steam, pipe still etc., while circulating for agitation. Where low temperatures suffice (225 degrees to 260 degrees Fahrenheit) one may obtain the needed heat from steam coils in the tank itself.

Type of Pumps

Centrifugal pumps have given very excellent results working on hot oil and clay. They are particularly desirable because of the excellent agitation they give in themselves. Reciprocating pumps for hot oil and clay are now being made by several of the larger pump manufacturers and have given very good results. The rotary pump would seem to be ideal, and some operating under our observation have given excellent results.

When contacting an oil, either a neutralized oil or one in the acid state, the use of steam in open jets, is always desirable, serving the old well-established purpose it has served so long in refining of sweeping the oil free of gases and at the same time acting to inhibit oxidation. It should never be introduced until the oil has reached a temperature that will prevent the condensation of water on the clay. This point in well-insulated stills or agitators is about 265 degrees Fahrenheit. In laboratory tests it is best not to introduce steam until about 300 degrees

(Continued on Page 204)

HISTORIC PIPE LINES TO BE TAKEN OVER BY STANDARD COMPANIES

OIL CITY, Pa., Sept. 24.—Negotiations are now nearing completion for the sale of the pipe lines of the Pure Oil Co., and the Producers & Refiners Pipe Line Co., in the State of Pennsylvania to the Southwest Pennsylvania Pipe Lines and the National Transit Co.

Application has now been made to the public service commission of the State for a certificate of public convenience evidencing the commission's requisite approval of the sale and a public hearing on the application will be held in the city council building, Pittsburgh, Pa., on Wednesday, September 28.

Under the arrangements thus far completed the lines of the Producers & Refiners Pipe Line Co., north of the southerly line of Butler County will be sold to the National Transit Co. and those of the Producers & Refiners from the southerly line of Butler County south to Coraopolis and the portion of the Pure Oil Pipe Line Co.'s lines from Coraopolis to the Pennsylvania-West Virginia state line would be sold to the Southwest Pennsylvania Pipe Lines. It is understood that the gathering as well as the trunk lines of the companies affected are included in the deal. The price involved in both cases was not made public.

The transaction will mark the changing of control of a line which was the only remaining one of a system which grew out of the controversy between Standard Oil and independent interests in the early nineties and late eighties. The other system that grew out of that dispute, the United States Pipe Line Co., was recently torn up.

The Producers & Refiners Pipe Line Co. was an outgrowth of the Producers Protective Association which was organized in 1888 and revived in 1890 as the result of low prices prevailing for crude oil in order to control the drilling operations and curtail production. A few men, including T. J. Vandergrift, Capt. R. H. Lee, Jerome Aiken, George H. Torrey, A. M. Todd, J. A. Gartlan, "Deck" Fair, Frank H. Taylor and others met in 1889 and appointed a committee to meet with the independent oil men to revive the organization. The officers chosen were J. W. Lee, C. P. Collins, Rufus Scott, R. J. Straight, T. N. Barnsdall and E. W. Johnson. Assemblies through their trustees then agreed to subscribe funds for the building of a pipe line, refining and marketing organizations. From this start the parent company, the Producers Oil Co., Ltd., was organized with a capital of $250,000, one-third of which came from the independent refiners of this territory.

The officers elected by the company were J. W. Lee, chairman; George H. Torrey, secretary and manager; S. Y. Ramage, treasurer, with A. D. Wood, Theodore B. Westgate and Clarence Walker constituting the board of managers. The pipe line was then built from Coraopolis to the Oil City territory and then extended to Warren and Bradford. Building of this line was one of the most dramatic in the history of the oil region, such action being bitterly opposed and fights being staged at each of the railroad crossings. First crude was run through the line on Christmas Day in 1892.

In addition to its lines in Pennsylvania the Pure Oil Co. is selling its pipe lines in West Virginia with the exception of the main line from Morganstown east to the Eureka Pipe Line Co. and its lines in southeastern Ohio to the Buckeye Pipe Line Co. The effective date is October 15.

Of Interest to Sales Departments

SALES OF DOMESTIC OIL BURNERS GROW

CHICAGO, Sept. 24.—Manufacturers of domestic oil burners are very optimistic regarding the business to be done the current season. Some organizations have stated their percentages of business increase to September 15 over last year which are rather impressive even when it is considered that the industry is new and that large percentages of increase do not necessarily mean a great volume of business. Considering the youth of the industry and that it is just beginning to receive that public approval which only follows a substantial list of satisfied customers, the present prospects are flattering to the leaders in the industry. It has not been easy to devise a burner that would be first of all reliable, not too expensive to install and whose operating costs would be in line with the service rendered.

"Safety First" must be the slogan of the oil burner manufacturer. There is a very distinct hazard to life and property in the use of oil for fuel, but the burners can be and are so safeguarded that the reports of fire marshals and of insurance companies prove that the use of the correctly designed and properly installed oil burner does not add to the fire risk of the home. Furthermore the oil burner manufacturer of today no longer bases his sales campaign on the claim that it costs less to heat with oil than with domestic coal. The claim for recognition of the oil burner in a home is now based on the fact that it gives a greater return in health and comfort on the cost than can be secured through the use of any kind of solid fuel in any make of heater using such fuel. Incidentally the cost of operation can be greatly decreased if the house is planned for oil heat when it is constructed and an oil heating plant installed then. In adapting the oil burner to the heating plant originally devised for the use of solid fuel, there is a considerable percentage of heat wasted. The advocates of heating with artificial gas recognize this and do not regularly install their gas heaters in a boiler or furnace devised orginally for the consumption of coal. At least if they do make such an installation it is wholly at the buyer's risk and without any guarantee as to the cost of operation.

Regarding the possibilities of growth for the oil burner, some data secured by a leading daily paper in Milwaukee, Wis., on the number of homes heated with oil in that city are very interesting. The report stated that of all the homes that could be heated with oil only 1.29 per cent had installed oil burners. Assuming that only 25 per cent of the homes in that city would be equipped with oil burners within a reasonable period, say 10 years, the result would be an increase of nearly 20 fold in the number of oil burners installed in that city and what is of chief interest to the oil man, 20 times as much oil to be consumed.

The possibilities of the increase in the demand for oil for domestic fuel are almost staggering. Assuming that the average consumption per burner is but 1,500 gallons yearly, which is at least a moderate estimate, and that by the close of the season of active installation this year there are 1,000,000 burners in use in the United States, this would mean an actual consumption of furnace oils ranging between 28 and 40 degrees gravity of 1,500,000,000 gallons. If this annual consumption be increased at the rate of 25 per cent each year until the total is reached of 20 times as much as at present the time would come when the volume of furnace oils required within the range of gravities indicated would equal the total consumption of gasoline for motor fuel.

Short Talks on Specifications

By W. T. Ziegenhain

POUR TEST

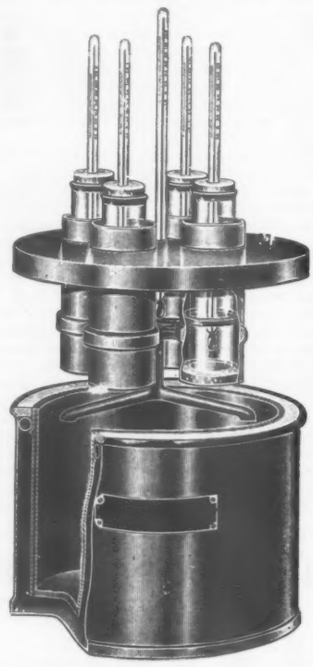
The pour test of an oil is intended to show its fluidity at low temperatures as

shown by the temperature at which the oil congeals as it is cooled down without disturbance under certain conditions. The lowest temperature at which the oil continues to flow is called the pour point. This is dependent upon the amount of wax present in the oil. A lubricant having a high pour point is considered inferior to one having a relatively low pour point, because there is more chance for the high pour point lubricant to congeal in the supply line or in the bearing when used at very low temperatures. But this fact is often stressed beyond its importance in the ordinary use for lubricants. The general run of standard lubricants of the same viscosity vary in pour point over a range of 30 degrees, yet all grades are used interchangeably in all parts of the United States except in a relatively few cases where this factor is of importance, such as in the case of ice machine lubrication, as recoil oil, etc. Thus the pour point may or may not be an important specification and the salesman is expected to weigh the importance of it with relation to the use to which the oil is put.

The apparatus used to make this test includes a suitable cooling bath, a standardized glass test jar, thermometer and an immersion jacket, to hold the test jar. The picture accompanying this article shows the apparatus assembled and includes four sets. Four samples may be run simultaneously in this apparatus but aside from its convenience does not differ in construction from the single units.

The procedure specifies that from 2 to 2¼ inches of the test bottle be filled with the oil to be tested. A ring gasket is slipped around the bottle 1 inch from the bottom and this keeps the bottle from touching the side of the jacket when the bottle is lowered into the jacket where it is cooled. The bottle rests on a cork disk one-fourth inch thick placed in the bottom of the jacket when in position. The cooling medium varies with the temperature needed. For temperatures down to 50 degrees Fahrenheit ice and water may be used. Crushed ice and common salt is used if the temperatures needed are as low as 10 degrees Fahrenheit and for temperatures down to 15 degrees Fahrenheit crushed ice and calcium chloride are used. When very low temperatures are required, solid carbon dioxide in gasoline or acetone is used. This provides for temperatures as low as 70 degrees Fahrenheit.

After the required amount of oil is poured into the test jar, it is tightly stoppered with a cork holding a thermometer vertically and the thermometer is adjusted so the bulb is entirely immersed in the oil. The oil is then heated in a water bath without stirring to a temperature of 115 degrees Fahrenheit. Then it is cooled to 90 degrees Fehrenheit. The sample is then lowered into the cooling jacket. Beginning at a temperature 20 degrees Fahrenheit above the expected pour point the test jar is removed from the jacket and tilted just enough to ascertain whether there is movement of the oil in the jar. If there is even a slight movement, the jar is placed back into the jacket immediately, and cooled further. The initial removal of the jar is done at a temperature a multiple of 5 and as the thermometer rises the bottle is removed at each 5 degrees lower temperature. When the oil ceases to move after holding the test jar in a horizontal position for five seconds 5 degrees is added to the



temperature reading taken at the time the bottle was removed and the sum of these is recorded as the pour point of the oil. A special procedure is used for black oils and cylinder stocks and will be included in the next issue of The Oil and Gas Journal.

OIL BURNER PATENT PRIORITY DECISION

The examiners in chief of the United States Patent Office have held valid the claim of Lewis L. Scott for a patent for oil burners which was granted to the applicant August 30, 1927, on his application filed February 3, 1926.

The examiners in chief found that the applicants delay in making patented claims was excused by his earlier prosecution of his claims, even though there was a continuity of pressing like claims.

This action gives this applicant an opportunity to contest priority with the Haas patents granted December 4, 1923, on an application filed June 16, 1922. The examiners cited the case of Chapman vs. Wintroath, a leading authority, for holding that if an appilcant fails for more than two years to claim an invention claimed in an issued patent, he is estopped to claim the invention.

"This decision," the examiners in chief stated, "does not lay down an invariable rule and hold that an applicant is precluded from explaining and excusing his delay in failing to copy claims from a patent for more than two years after the grant of the patent. This office recognizes the right of an applicant to explain his delay in making claims. One of the excuses which has been held to be satisfactory is the fact that the party was seeking to make claims taken from a patent more than two years after the grant of the patent and continued to claim it thereafter. In the present case the appellant was claiming the invention here involved when the Haas patent was issued and for a year and three months thereafter. The fact that there was a break of about 11 months in the continuity of claiming was not due to any intention to abandon the invention."

LABORATORIES LISTED IN BUREAU DIRECTORY

The National Bureau of Standards has compiled a list of laboratories throughout the country that are prepared to test various kinds of commodities to determine whether or not they comply with purchase specifications. A large number of the 207 commercial testing laboratories listed are in a position to test petroleum products for both domestic and export trade.

In addition to the list of these commercial laboratories there has been compiled a list of 143 college laboratories which are used not only for the purposes of instruction but also to a considerable extent for research work. A copy of the directory containing these lists can be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C. The name of the publication is "Directory of Commercial Testing and College Research Laboratories" (Bureau of Standards Miscellaneous publication No. 90). The price is 15 cents.

FUEL OIL CONSUMED BY PUBLIC UTILITIES

Fuel oil as fuel for electricity production at public utility power plants is a small factor in the total amount of fuel consumed according to a report just made public by the Geological Survey of the Department of the Interior. In 1926 according to the report the amount of oil fuel used amounted to only 3.1 per cent of the total. Coal was first with a total of 57.7 per cent. Other sources of power were water 35.5 per cent, gas 3.3 per cent and wood 0.4 er cent.

The use of fuel oil in generating electricity has declined since 1924 when it reached its maximum and less fuel oil was used in 1926 for this purpose than in any other year since 1918. In 1926 the amount of fuel oil consumed by public utility power plants was only 57 per cent of that used in 1924.

NOT A. S. T. M.

In the issue of July 14 the burning test for kerosene as outlined under the heading "Short Talks on Specifications," was said to have been recently adopted by the American Society for Testing Materials. The method described was not adopted by the A. S. T. M. but is the one adopted by the Government and is outlined in Bulletin 323A. The newly adopted A. S. T. M. method is more stringent since it requires the test to be conducted over a 24-hour period with the flame 1¾ inches high, while the government test specifies but 16 hours and a 1-inch flame. Both tests are in use but the newly adopted A. S. T. M. test is considered an improvement over the government test and most refiners are now using it.

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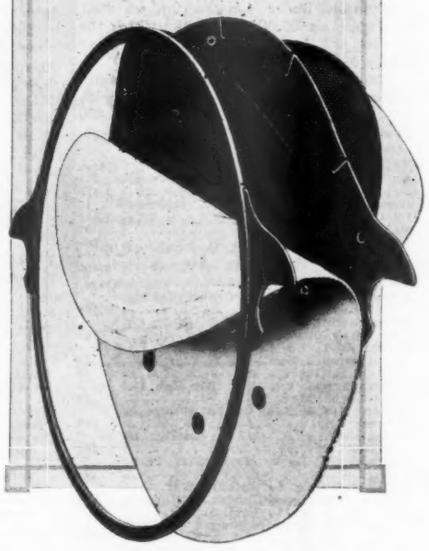

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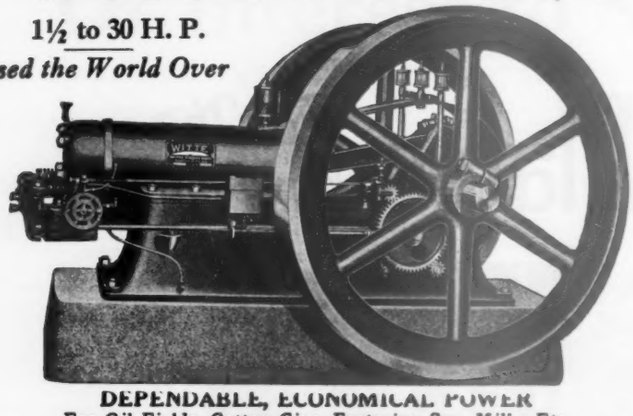

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PANHANDLE CRUDE STOCKS DROP FOR FIRST TIME DURING AUGUST

AMARILLO, Tex., Sept. 24.—While Panhandle daily average production was dropping another 15,000 bb'ls., similar to the July decline, crude oil stocks were reduced during August for the first time since the big boom began away back in the early part of 1926. Total net pipe line receipts, exclusive of storage oil run through the lines, amounted to 3,035,396 bbls. or nearly half a million barrels less than the receipts for July. Total crude in storage September 1 was 18,687,031 bb'ls. or 110,031 bbls. less than the figures for August 1.

Following is a table showing how Panhandle crude stocks have risen since the first of the year:

	Bbls.
January 1	10,152,636
February 1	11,163,599
March 1	12,335,577
April 1	14,738,262
May 1	16,899,591
June 1	18,338,812
July 1	18,621,853
August 1	18,797,062
September 1	18,687,031

The last big increase in stocks came during the month of May, 1927, but August reveals the first actual decline.

These crude oil stocks are distributed as follows, by counties:

	Bbls.
Hutchinson	8,396,084
Carson	4,588,718
Gray	5,654,652
Wheeler	47,577
Total	18,687,031

Distribution of stocks among the leading companies is as follows:

	Bbls.
Magnolia P. L. Co.	3,833,452
Bartex (Phillips Pet.)	3,348,848
Gulf P. L. Co.	3,161,470
Prairie P. L. Co.	2,441,239
Marland P. L. Co.	2,003,155
Skelly Oil Co.	1,017,352
Plains P. L. Co	642,445
Humble P. L. Co.	626,036
Bell O. & G. Co.	200,300
Empire P. L. Co.	175,964
Cockrell-McIlroy & McIlroy Oil Co.	136,001
Japhet, Dan	107,474
Devonian Oil Co.	303,418
Roxana Pet. Corp.	230,272
Midwest Exp. Co.	84,612
Perkins, et al	79,230
American Ref. Co.	70,389

Steel Storage Capacity

Total steel storage capacity was 23,384,500 bbls. on September 1, leaving 4,697,469 bbls. of space unfilled. The only tanks under construction on that date were six 55,000-bbl. tanks which the Prairie Oil & Gas Co. was building at Kings Mill.

Tank car shipments during the month amounted to 4,399 cars as compared with 4,849 cars during July, a decrease of 450 cars. The August shipments were distributed as follows:

From—	Cars
Amarillo	344
Isom	2,215
Kings Mill	14
Pampa	1,680
Panhandle	37
Lela	106
Total	4,399

Company, Shipped to—	Cars
Atlantic O. P. Co. to Crown Central at Houston	180
Bartex (Phillips Pet.) to N. O. R. Co. at Texas City	566
Bartex P. L. Co. to Peerless Ref. Co. at Chanute, Kan.	20
Bell Oil & Gas Co., est.	60
Champlin Ref. Co. to Colfax Ref. Co. Clovis, N. Mex.	14
Empire Gas & Fuel Co. to Empire at Texas City	298
Humble O. & R. Co. to Humble at Texas City	265
Marland Oil Co. to Marland at Texas City	175
Marland Oil Co. to Dalhart, Tex.	4
Pantex Pr. L. Co. to Pantex at Houston	344
Plains P. L. Co. to Port Arthur	37
Roxana Pet. Corp. to Roxana at Wood River, Ill.	1,353
Sinclair O. & G. Co. to Sinclair at Houston	511
Skelly Oil Co. to Skelly at Eldorado, Kan.	572
Total	4,399

Pipe Line Runs

Pipe line runs for August were practically the same as the previous month, being 63,267 bbls. daily or 1,961,292 bb'ls. for the month as against 63,539 bbls. daily during July, a total of 1,969,487 bbls. They were distributed as follows:

Line	Daily aver.	Total bbls.
Gulf-Magnolia	23,718	735,267
Humble	33,280	1,031,689
Prairie	6,269	194,336
Totals	63,267	1,961,292

Receipts

Controlled and free oil just about balance each other in the Texas Panhandle, there being 48,670 bbls. of controlled oil coming from 698 wells, and 49,627 bbls. of free oil from 628 wells. This is about the same proportion as prevailed in July.

The term "controlled oil" means crude oil that has been produced and is owned by a crude oil purchasing company, while "free oil" is oil produced by other than a crude oil purchasing company. For example the oil produced by the Humble Oil and Refining Co. would be classified by that company as "controlled oil," but the oil it has acquired by purchase from other producers comes under the head of "free oil."

Controlled Oil

	July		August	
County	Wells	Bbls.	Wells	Bbls.
Hutchinson	607	49,906	589	43,597
Carson	77	4,782	71	3,711
Gray	49	1,641	33	1,323
Wheeler	5	113	6	111
Totals	738	56,442	698	48,671

Free Oil

	July		August	
County	Wells	Bbls.	Wells	Bbls.
Hutchinson	357	42,292	392	34,137
Carson	72	5,437	85	5,141
Gray	87	7,588	120	8,834
Wheeler	30	2,121	30	1,401
Potter	1	0	1	44
Totals	558	57,439	628	49,457

Totals Free and Controlled

Hutchinson	964	92,198	981	77,644
Carson	150	10,219	156	8,852
Gray	146	9,230	153	10,157
Wheeler	35	2,234	35	1,512
Potter	1	0	1	44
Totals	1,296	113,881	1,326	98,209

Natural gasoline production for August, 8,998,169 gallons.

Natural gasoline shipments, 1,248 cars.

Storage, September 1, 10,177,057 gallons.

Storage, August 1, 7,165,813 gallons.

LOUISIANA-ARKANSAS CRUDE STOCKS LOWER

SHREVEPORT, La., Sept. 24.—Crude stocks in the Arkansas and North Louisiana fields on September 1 totaled 30,382,026 bbls., according to figures just compiled here. This is a slight decrease in storage from August 1 when stocks were 30,970,611 bbls. The decline was 588,585 bbls.

The drop reflected particularly a further tightening of Smackover crude where storage on September 1 was 683,712 bbls. less than on August 1. Production in the Smackover has been maintaining a steady decline, now being around 77,000 bbls. daily, or less than at any time since before the boom days. That crude has been kept in steady demand with premiums as high as 15 cents a barrel being paid by independents.

A decrease in storage also was indicated in the main El Dorado field where production also has been on the wane. Storage in the Nevada County field in Arkansas, as well as in North Louisiana field, increased. Stocks by districts on September 1 and August 1 were:

Arkansas	September 1	August 1
Smackover (steel)	6,136,223	6,176,8[illegible]
Smackover (earthen)	7,631,674	8,274,8[illegible]
Total	13,767,897	14,451,6[illegible]
Nevada County (steel)	133,201	137,8[illegible]
Nevada County (earthen)	125,000	119,9[illegible]
Total	258,201	257,8[illegible]
El Dorado	2,467,985	2,824,8[illegible]
Total Arkansas	16,494,083	17,534,[illegible]
North Louisiana		
All fields	13,887,943	13,436,1[illegible]
Total both states	30,382,026	30,970,[illegible]

AUSTRALIAN OIL SURVEY

An investigation, to be jointly financed by the Australian Government and the Empire Marketing Board, into methods of surveying for oils and minerals within the British Empire has received the approval of both parties concerned. It is anticipated that the work, which will be conducted under the guidance of a competent expert, and is likely to prove of value to many parts of the Empire, will take two years to complete.

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No Electrical Parts in Pressure Chamber No Mechanical Parts going out of it

5 Exclusive Advantages

1. *Inductance Bridge circuit.*
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3. *Inherently independent of voltage fluctuations.*
4. *No electrical parts in pressure chamber. No mechanical parts going out of it.*
5. *Double-range manometer.*

NO RESISTANCE elements. No make-and-break contacts. No voltage regulator. No compensator. No permanent magnets. Just an armature moving up and down within a coil, as the mercury rises and falls with changes in flow. Coil and all electrical parts are sealed from pressure chamber by non-magnetic, metallic tube, illustrated. Only by the use of the *inductance bridge principle,* exclusive with the Brown Electric Flow Meter, is this extraordinary simplicity possible in a flow meter.

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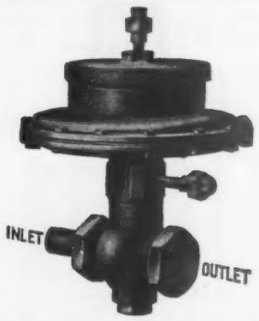

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NEW LOCATIONS IN TEXAS PANHANDLE AND NORTH AND WEST TEXAS FIELDS

TEXAS PANHANDLE

Carson County

Willis and others' No. 1 S. B. Burnett, C SE SW NW, Section 111, Block 5, I. & G. N. Survey.

Gray County

H. C. McAuley and others' No. 1 J. S. Morse, 990 feet south and 330 feet east of NW cor. SE, Section 2, Block 26, H. & G. N. Survey.

Hutchinson County

Harris and others' No. 1 Lee Bivins, 456 feet north and 153 feet west of SE cor., Section 91, Block 46, H. & T. C. Survey. Paramount Oil Co.'s No. 3 J. M. Sanford, 330 feet north and east of the SW cor. of the west 80 acres of the north 160 acres of the south 526 acres of Section 82, Block 46, H. & T. C. Survey.

NORTH CENTRAL AND WEST TEXAS

Archer County

W. Hammon and others' No. 2 Kemp & Kell, 150 feet north and 200 feet west of SE cor. NE NE, Section 6, S. P. R. R. A-797. O'Neil & Carter's No. 1 L. F. Wilson, 200 feet south and east of NW cor. SW SE, Thomas Toby Survey, A-646. Perkins & Cullum's No. 5 J. H. Turbeville, 150 feet north and west of the SE cor. of the west 40 acres of the south 152 acres of Section 124, A. T. N. C. L. Royal Petroleum Co.'s No. 17 L. F. Wilson, 1,050 feet north and 750 feet east of SW cor. of their lease out of the D. L. & C. Survey, A-1,093 Barkley-Meadows and others' No. 2 W. L. Andrews, 2,190 feet north and 5,430 feet east of the SW cor. of the William Spavin Survey, A-371. C. B. Long and others' No. 1 L. L. Hudson, 150 feet south and west of NE cor. of the west 20 acres of the NE of Section 79, Club Ranch Subdivision. Robert Oil Corp.'s No. 2 J. R. Garvey, 1,550 feet north and 1,365 feet west of SE cor., Section 1,802, T. E. & L.

Mitchan-Hart and others' No. 1 W. R. Farmer, 150 feet north and west of SE cor. of Section 6, North Anderson ranch subdivision. Robert Oil Corp. and others' No. 1 T. L. Blewitt, 1,100 feet south and 700 feet east of NW cor. of the east half of Section 2, S. P. R. R., A-1,253. The Texas Company's No. 1 C. E. Wilhelm, 2,440 feet north and 1,150 feet west of SE cor. of Section 2,420, T. E. & L.

Brown County

H. K. Deauvaux's No. 1 T. C. & R. W. Giddings, 150 feet north and 4,239 feet east of SW cor. of the T. C. & R. W. Giddings 630-acre tract out of the J. J. Clelland Survey No. 63. Gholson and others' No. 2 T. J. Collier, 150 feet south and 1,000 feet east of NW cor. of the T. J. Collier Survey. Humble Oil & Refining Co.'s No. 1 Jim Gilbreath, 150 feet north and 161 feet east of SW cor. of the R. F. DeBord Survey, A-2,136. Same company's No. 2 Jim Gilbreath, 150 feet north and 503 feet east of SW cor. of same survey.

Josey & Finchbaugh's No. 1 G. W. Jones, 450 feet north and 150 feet west of the SE cor. of Section 16, J. Delgado Survey No. 785. J. M. McMurray and others' No. 15 J. P. Newton, 1,735 feet south and 150 feet west of the NE cor. of the J. P. Newton 322-acre tract out of the William L. Swain Survey No. 145. E. N. Schaffner's No. 5 E. D. Henson, 1,050 feet south and 150 feet east of the NW cor. of the south 55 acres of the E. D. Henson 89-acre tract out of the G. Logan Survey No. 147. Selby Oil & Gas Co.'s No. 15 A. J. Ellis, 450 feet south and 1,080 feet west of the NE cor. of their 130-acre lease out of Section 3, S. A. & M. G. Survey, A-850. Same company's No. 16 A. J. Ellis, 450 feet south and 1,410 feet west of the same corner of the same 130-acre lease. Sinclair Oil & Gas Co.'s No. 3 M. L. Smith, 1,052 feet north and 161 feet west of the SE cor., Section 1, S. A. & M. G. Survey, A-849. Same company's No. 4 M. L. Smith, 1,654 feet north and 161 feet west of the SE cor., Section 1, S. A. & M. G. Survey, A-849. Same company's No. 5 M. L. Smith, 1,955 feet north and 161 feet west of the SE cor., Section 1, S. A. & M. G. Survey, A-849. E. L. Smith Oil Co.'s No. 7 M. L. Smith, 450 feet north and 150 feet west of the SE cor. of their 60-acre lease out of Section 1, S. A. & M. G. Survey, A-849. Same company's No. 8 M. L. Smith, 750 feet north and 150 feet west of the SE cor. of the same 60-acre lease. Tower & McKanna, Inc.'s No. 1 Edmondson, 150 feet south and east of the NW cor. of the south 40 acres of the west 80 acres of the T. Townsend Survey, A-923.

Bradstreet & Stout's No. 10 W. A. Stout, 1,410 feet north and 480 feet east of SW cor. of Lot 2, W. B. Smith Survey No. 155. Forest Oil Co.'s No. 10 M. L. Smith, 450 feet north and west of SE cor. of their lease out of Section 1, S. A. & M. G. Survey, A-849. Same company's No. 11 M. L. Smith, 750 feet north and 450 feet west of the SE cor. of their lease out of Section 1, S. A. & M. G. Survey, A-849. Gilman & McMurray's No. 16 A. B. Teston, 165 feet south and 750 feet west of NE cor. of the A. B. Teston 136-acre tract out of the W. B. Smith Survey No. 155. Same company's No. 17 A. B. Teston, 155 feet south and 1,050 feet west of the NE cor. of the A. B. Teston 136-acre tract of the W. B. Smith Survey No. 155. J. K. Hughes' No. 1 Jim Gilbreath-B, 191 feet south and 933 feet east of the NW cor. of the J. A. Belvin Survey, A-1,961, being 150 feet north and west of the SE cor. of his 11-acre "B" lease. Roxana Petroleum Corp.'s No. 13 M. L. Smith, 503 feet south and 474 feet east of NW cor. of their 60-acre lease out of Section 1, S. A. & M. G. Survey, A-849. Same company's No. 14 M. L. Smith, 150 feet north and 474 feet west of the SE cor. of their 60-acre lease out of Section 1, S. A. & M. G. Survey, A-849. Same company's No. 15 M. L. Smith, 150 feet south and 474 feet east of NW cor. of their 60-acre lease out of Section 1, S. A. & M. G. Survey A-849. Same company's No. 16 M. L. Smith, 150 feet south and 798 feet east of NW cor. of their 60-acre lease out of Section 1, S. A. & M. G. Survey, A-849. Same company's No. 17 M. L. Smith, 150 feet south and 1,122 feet east of NW cor. of their 60-acre lease out of Section 1, S. A. & M. G. Survey, A-849. Same company's No. 18 M. L. Smith, 150 feet south and 474 feet west of the NE cor. of their 60-acre lease out of Section 1, S. A. & M. G. Survey, A-849. Smith Oil Co.'s No. 2 M. L. Smith, 150 feet north and 474 feet west of SE cor. of their 60-acre lease out of Section 1, S. A. & M. G. Survey, A-849. Same company's No. 3 M. L. Smith, 150 feet south and 798 feet west of SE cor. of their 60-acre lease out of Section 1, S. A. & M. G. Survey, A-849. Same company's No. 4 M. L. Smith, 150 feet north and 1,122 feet west of SE cor. of their 60-acre lease out of Section 1, S. A. & M. G. Survey, A-849. Same company's No. 5 M. L. Smith, 150 feet north and 474 feet east of the SW cor. of their 60-acre lease out of Section 1, S. A. & M. G. Survey, A-849. The Texas Company's No. 23 Roy Hickman, 1,233 feet north and 530 feet west of SE cor. of their 160-acre lease out of the Thomas Benson Survey No. 783. Valley Oil Co.'s No. 7 A. B. Teston, 165 feet north and 1,050 feet west of the SE cor. of the A. B. Teston 50-acre tract out of P. Curlong Survey No. 151. Wilson & Vandiver's No. 1 John Eads, 400 feet south and 150 feet west of the NE cor. of the John Eads 20-acre tract out of the Samuel Bangs Survey No. 108.

Callahan County

Humble Oil & Refining Co.'s No. 1 J. O. Hall, 2,000 feet north and west of SE cor. of the R. A. Pace Survey No. 232. J. C. Kelly and others' No. 1 J. M. Radford, 150 feet south and east of NW cor. SW, Section 79, Blind Orphan Asylum Lands. Navarro Oil Co.'s No. 5 Bennett-Booth, 150 feet south and west of NE cor. of the east 40 acres of the north half of Section 99, Comal County School Lands. Star & Kiser's No. 1 J. G. Blakeley, 150 feet south and west of the NE

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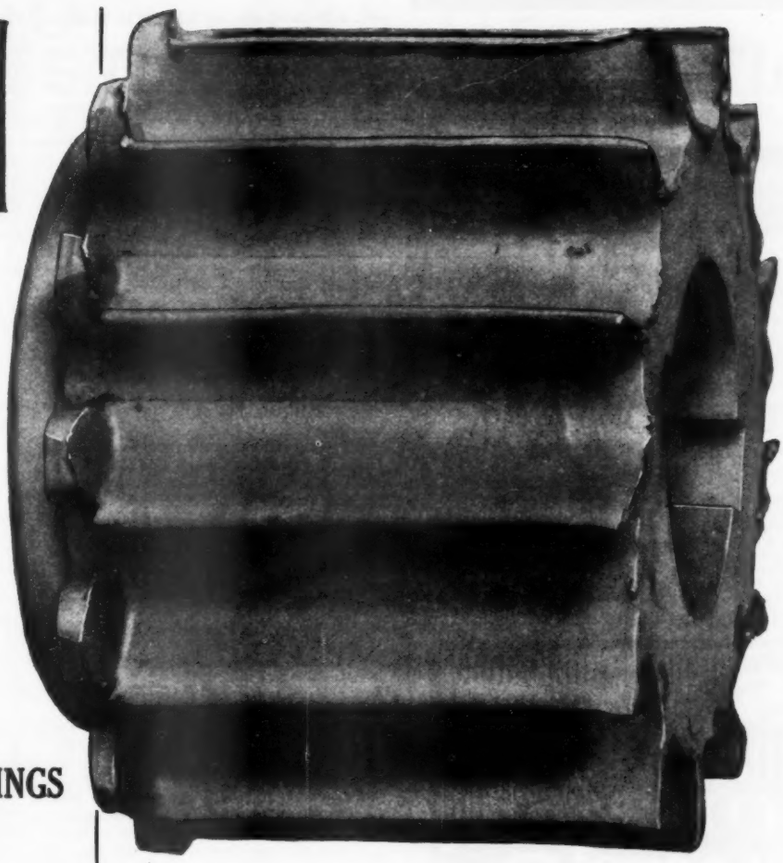

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After an ordinary steel gear casting on a sand milling machine had to be replaced once every three or four weeks, a Sivyer Alloy Steel gear was tried. This Sivyer gear—under severe abrasive conditions, carrying a 25 H. P. load—milled 41,200 tons of sand in the trial period of one year and three days. Though the teeth of this gear had worn away from 3-4 to 1-8 inches, and the edges peaned slightly, a close inspection failed to show a single sign of a crack, fracture or bent tooth. This Sivyer Alloy Gear casting lasted 13 times as long as the ordinary steel gear casting previously used—it saved 90% of the purchase and installation expense of 12 gears in one year—and eliminated the 13 costly delays for making replacements. Service such as this shows the long-life and low-cost qualities of Sivyer Alloy Steel Castings.

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cor. NW NW, Section 127, B. B. B. & C. Survey.

Purcell & McLendon and others' No. 1 Tom W. Gary, 150 feet south and east of NW cor. of the NE of the north 160 acres of Section 40, Deaf & Dumb Asylum Lands. Stalker Oil Co.'s No. 1 A. H. McCord, 150 feet south and east of NW cor. of the A. H. McCord tract out of the T. H. Brown Survey No. 218.

Clay County

H. R. Edwards' No. 2 J. Wetsel, 450 feet south and 150 feet west of NE cor. of the J. Wetsel 38.1-acre tract out of B. B. B. & C. Survey, No. 1, A-54. Grubbs & Gill's No. 1 Mrs. J. Gault, 168 feet north and 475 feet east of SW cor. of Section 2,816, T. E. & L. Survey, A-537.

Coleman County

Magnolia Petroleum Co.'s No. 19 J. P. Morris, 1,510 feet north and 4,410 feet east of SW cor. of the D. Breeding Survey No. 728.

National Refining Co.'s No. 1 T. A. Crump, 1,200 feet south and 1,000 feet west of the NE cor. of the T. A. Crump 80-acre tract out of Section 2, Coleman County School Lands No. 57. Ralph Hart's No. 1 Coleman County, 150 feet south and 900 feet east of NW cor. of Coleman County School Lands No. 57.

Cooke County

Bell Oil Corp.'s No. 2 J. Koelzer, 420 feet south and 150 feet east of NW cor. of J. Koelzer 80-acre tract out of Section 13, Thomas Scott Survey, A-900, being 170 feet south and 150 feet east of the NW cor. of their 3.33-acre lease. Kewanee Oil & Gas Co.'s No. 2 H. L. Dennis-B, 1,790 feet south and 150 feet east of the NW cor. of the J. B. McClyman Survey, A-735.

Moorefield and others' No. 1 C. A. Stelzer, 65 feet south and 450 feet west of NE cor., Block 58, town of Muenster. Oil Operators Trust Co.'s No. 5 J. Koelzer, 150 feet north and 708 feet east of SW cor. of their 18-acre lease out of Section 13, Thomas Scott Survey, A-900.

Crane County

Magnolia Petroleum Co. and Hardwick's No. 12 University land, 990 feet north and 2,310 feet west of SE cor. of Section 38, Block 30, University Lands. Pecos Oil Co.'s No. 8 University land, 990 feet north and 2,310 feet east of SW cor. of Section 47, Block 30, University lands.

Humble Oil & Refining Co.'s No. 12 University Land, 2,310 feet north and 990 feet east of SW cor. of Section 38, Block 30, University Lands. Tidal Oil Co.'s No. 1 University Land-J, 200 feet north and 330 feet east of SW cor. of Section 48, Block 30, University Lands.

Crockett County

World Oil Co.'s No. 1 P. J. Sorg estate, 2,310 feet south and east of NW cor. of Section 50, T. C. R. R. Survey, Block "BB."

C. A. Jones and others' No. 1 L. P. Powell, 660 feet south and 1,155 feet west of the NE cor. of Section 53, Block BB, G. C. & S. F. R. R. Survey. Gulf Production Co.'s No. 2 G. L. Thompson and others, 450 feet north of the south line and 150 feet northeast of the southwest line of their lease out of Section 71, Block 1, I. & G. N. Survey.

Eastland County

Adamson & Bearman's No. 2 N. N. Rosenquest, 450 feet south and east of the most northerly northwest corner of the N. N. Rosenquest 553.6 acre tract out of Section 3, Block 6, E T. R. R. Survey. T. J. Allworth's No. 1 J. H. Clemmer, 350 feet south and 750 feet west of the NE cor. of the J. H. Clemmer 138-acre tract out of the W. Frels Survey. C. H. Hurdleston and others' No. 2 W. U. Fox, 150 feet north and 338 feet east of SW cor. of Section 67, McLennan County School Lands, Leagues Nos. 3 and 4. Chestnut & Smith Corp.'s No. 1 J. W. Ward, 380 feet north and 1,350 feet east of SW cor. of the N half of NE of Section 66, Block 4, H. & T. C. Survey. C. M. Root and others No. 3 J. M. Ray, 600 feet north and 2,000 feet west of SE cor. of the S half of Section 38, Block 4, H. & T. C. Survey.

D. Barkley and others' No. 1 A. L. Duffer, 1,450 feet south and 150 feet east of NW cor. of Lot 13, McLennan County School Lands No. 2. Gilman & Simmons' No. 1 E. J. Ward, 660 feet south and east of NW cor. of the S. J. Robinson Survey, Livingston & Wellman's No. 1 C. L. Thompson, 990 feet north and 660 feet east of SW cor. of the NW of Section 18, Block 4, H. & T. C. Survey.

Howard County

Mays, Nixon & Flowers No. 1 W. J. Flowers, 1,320 feet south and west of NE cor. of Section 42, Block 31, Township 1n, T. & P. R. R. Survey.

Magnolia Petroleum Co.'s No. 8 Kelly Chalk, 990 feet south and 2,260 feet east of NW cor. of Section 124, Block 29, W. & N. W. Survey.

Jack County

Mitchell & Spoonts No. 1 A. D. McCaslin, 600 feet south and 900 feet west of NE cor. of the A. D. McCaslin 120-acre tract out of the N. Ware Survey, A-886.

Knox County

Deep Rock Oil Co.'s No. 1 W. R. Moore et al, 1,320 feet south and east of NW cor. of Section 1, G. C. & S. F. Survey A,-539.

Mitchell County

The California Co.'s No. 7 C. M. Adams, Lease No. 2, 1,650 feet south and 990 feet east of the NW cor. of Section 11, Block 28, Township 1n, T. & P. R. R. Survey.

Montague County

Baker & McClure's No. 1 L. Hodge, 150 feet south and east of the NW cor. of the NE of the J. G. King Survey, A-414. Bridwell & Heydrick and Continental Oil Co.'s No. 3 H. C. McGaughy, 1,080 feet north and 1,094 feet east of SW cor. of the H. C. McGaughy 90-acre tract out of the George Nichols Survey, A-571. Continental Oil Co.'s No. 1-A Mrs. S. F. Loy and others, 3,881 feet north and 999 feet east of the most westerly SW cor. of the Mrs. S. F. Loy and others' 210-acre tract out of the William Donoho Survey A-178.

Parker County

Wood-Hats Oil Corp.'s No. 1 S. Bell, 150 feet south and east of the most northerly NW cor. of the James H. Warfield Survey.

Palo Pinto County

D. A. Upham's No. 1 J. A. Wharton, 400 feet south and east of the NW cor. of the J. A. Wharton 200-acre tract out of the George Green Survey, A-207. Richardson & Dalton's No. 1 W. A. Edgin, 1,200 feet north and 150 feet west of the SE cor. of the west 50 acres of the east 100 acres of the S. M. Williams Survey, A-341.

Mountain Oil Co.'s No. 1 M. B. & M. Y. Costello, 200 feet north and 1,610 feet west of SE cor. of the M. B. & M. Y. Costello 87.5-acre tract out of the John T. Smith Survey. Panhandle Refining Co.'s No. 1 Roy Hittson, 1,320 feet north and 330 feet east of SW cor. of Section 33, Block 2, T. P. R. R. Survey.

Pecos County

The California Co.'s No. 5 I. G. Yates, 1,934 feet north of the north line of Section 33 and 1,611 feet west of the most easterly east line of Section 34, Block 194, G. C. & S. F. Survey.

George Anderson and others' No. 1 T. N. McKenzie, C of SE of the N half of Section 6, Block 604, G. C. & S. F. Survey. Douglas Oil Co.'s No. 1 Myrtle Sellman, 330 feet north and east of the SW cor. of NE of Section 6, Block 194, G. C. & S. F. Survey. George Henshaw and others' No. 1 B. T. Corder, C of SW of Section 74, Block 2, C. C. S. D. & R. G. N. G. R. R. Survey. McMan Oil & Gas Co. and Marland Oil Co.'s No. 5 I. G. Yates, 275 feet north and 330 feet east of the NW cor. of Section 35, and located in Section 34½, Block 194, G. C. & S. F. Survey. Same company's No. 6 I. G. Yates, 275 feet north and 330 feet west of NE cor. of Section 36, and located in Section 34½, Block 194, G. C. & S. F. Survey. Moody Oil Corp.'s No. 1 B. T. Corder, C of SW of Section 77, Block 2, C. C. S. D. & R. G. N. G. R. R. Survey. The California Co.'s No. 2 Mrs. M. A. Smith, 275 feet south and 330 feet east of NW cor. of Section 35, Block 194, G. C. & S. F. Survey. World Oil Co.'s No. 1 A. Kloh et al, 2,310 feet south and west of NE cor. of Section 47, Block 48, Township 8, T. P. R. R. Survey.

Reagan County

Big Lake Oil Co.'s No. 132 University

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Number Seven in a Series of Advertisements

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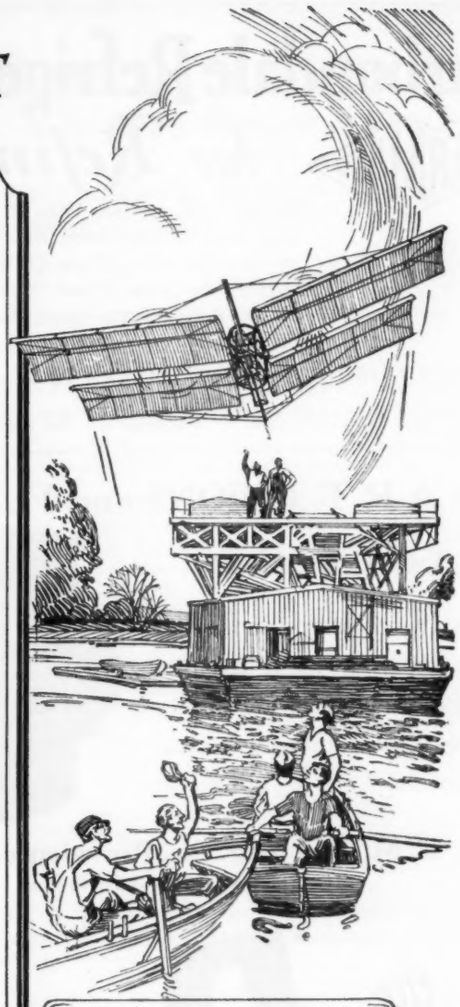
THE same year that saw Langley succeed in flying his model aerodrome—the first mechanically propelled, heavier-than-air machine—also saw the first commercial application in the United States of a structural grade of Nickel Steel.

In 1896, the Union Drawn Steel Company of Beaver Falls, Pa., first produced 5% Nickel Steel cold drawn letter "B" chain blocks, from which the Whitney Manufacturing Co. of Hartford, Conn., made the first alloy steel bicycle chains for The Pope Manufacturing Co. This application helped pave the way for Nickel Steel's later adoption by the automotive industry.

The many years of Nickel Steel development have contributed to an extensive fund of information concerning the superior properties of these Alloys. You are invited to consult our staff of engineers and thus draw upon these helpful data.



Samuel P. Langley successfully launched his No. 5 Model Aerodrome on the Potomac River, May 6, 1896. "For the first time in the history of the world a device produced by man had actually flown through the air." (Langley Memoir)

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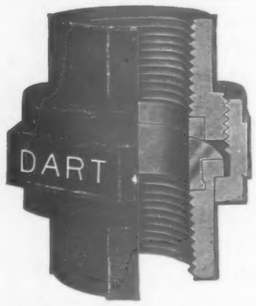

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land, 400 feet south and 2,240 feet east of NW cor. of Section 25, Block 9, University lands. Same company's No. 133 University land, 1,720 feet south and 920 feet east of NW cor. of Section 25, Block 9, University lands. Same company's No. 134 University lands, 920 feet south and 400 feet east of NW cor. of Section 12, Block 2, University lands. Same company's No. 135 University lands, 400 feet south and 1,720 feet east of NW cor. of Section 1, Block 2, University lands. Same companys No. 136 University lands, 2,240 feet south and 400 feet west of NE cor. of Section 35, Block 1, University lands.

Runnels County

Owenwood Oil Corp.'s No. 1 H. B. Fowler, 900 feet north and 3,520 feet east of the SE cor. of Section 346, B. B. B. & C. Survey, and located in the Domingo Diaz Survey No. 532, being 2,472 feet south and 150 feet west of the NE cor. of the H. B. Fowler 129.83-acre tract.

C. W. Alworth and others' No. 1 E. A. Werner, 160 feet north and 644 feet east of SW cor. of Section 60, J. H. Wilson Survey. Kennedy and others' No. 1 J. E. Tally, 2,310 feet south and 1,445 feet west of NE cor. of the John C. McKean Survey No. 534, being 910 feet east and 1,689 feet north of the SW cor. of the J. E. Tally 158.3-acre tract.

Shackelford County

Bridwell & Heydrick's No. 2 L. C. McKelvey, 150 feet south and 450 feet west of the NE cor. of Section 9, Block 11, T. & P. R. R. Survey. Humble Oil & Refining Co.'s No. 3 G. R. Davis, 1,014 feet north and 139 feet west of the SE cor. of Section 218, Block 10, E. T. R. R. Survey.

Merry Brothers & Perini's No. 1 L. C. Huskey, 1,100 feet southeast of the northwest line of Section 529, and 150 feet northeast of the southwest line of Section 529, T. E. & L.

J. Harris and others' No. 1 W. McLemore, 4,250 feet north and 300 feet east of SW cor. of Section 144, T. E. & L. Reverend Reynold and others' No. 1 S. Webb, 1,980 feet north and 2,010 feet west of the SE cor. of Section 19, Block 11, T. P. R. R. Survey. Roeser & Pendleton and Phillips Petroleum Co.'s No. 1 B. S. Walker, 450 feet north and east of SW cor. of Section 383, T. E. & L. Survey.

Stephens County

Livingston & Wellman's No. 1 S. E. Ledbetter, 250 feet south and west of NE cor. of SW or NW of Section 84, Block 6, T. & P. R. R. Survey. Mook-Texas Oil Co.'s No. 4 George Riddle and others 1,320 feet south and 200 feet east of NW cor. E half NE. Section 45, Block 6, T. & P. R. R. Survey. R. C. Payne's No. 1 W. S. Tipton, 450 feet south and 750 feet east of NW cor. of Section 5, Block 8, T. & P. R. R. Survey.

Hanlon Gasoline Co.'s No. 1 W. T. Sikes, 1,385 feet north and 600 feet east of the most southerly SW cor. of Section 13, Block 6, T. P. R. R. Survey. Same company's No. 1 R. F. Todd, 600 feet south and 1,060 feet east of the NW cor. of the north 100 acres of the E half of the S half of Section 12, Block 6, T. P. R. R. Survey. Sowell Brothers' No. 1 E. R. Stephens, 660 feet south and west of NE cor. of Section 50, Orphan Asylum lands.

Wichita County

Henry Hobbs' No. 1 J. A. Watkins, 200 feet north and 150 feet west of SE cor. of the west 35.5 acres of the north 60 acres of Section 46, Wichita Valley Farm Lands. C. P. Sheldon and others' No. 6-A Frankl and others, 150 feet south and 450 feet east of NW cor. of Section 328, Waggoner Colony Subdivision. The Texas Company's No. 66 W. B. Honaker 5,725 feet south and 200 feet east of NW cor. of Section 3, D. L. & C. Survey, A-713.

Magnolia Petroleum Co.'s No. 135 H. Reilly, 2,850 feet north and 450 feet west of the SW cor. of the J. Ellis Survey, A-175, and located in the L. C. Denison Survey, A-55. Seaboard Oil & Gas Co. and Prairie Oil & Gas Co.'s No. 2 J. F. Boyd, 150 feet north and east of SW cor. of the north 50 acres of Lot No. 12,

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J. T. Lewis Survey, A-462. Verschoyle & Vaughn's No. 2 G. B. Ancell, 150 feet south and west of the NE cor. of the SW of the SW of Section 11, Block 7, H. & T. C. Survey, A-113.

Winkler County

Cranfill & Reynolds' No. 2 Ida Hendrick, 990 feet south and east of the NW cor. of Section 28, Block B-5, School lands. Murchison Oil Co. and others' No. 2 Grisham-Hunter, 1,650 feet north and 330 feet east of SW cor. of Section 35, Block B-5, School lands. Pure Oil Co.'s No. 3-B Grisham-Hunter, 1,650 feet north and 330 feet west of SE cor. of Section 34, Block B-5, School lands.

Young County

Baldwin & C'ark's No. 1 D. M. Spearman, 150 feet south and east of NW cor. of the D. M. Spearman 540 acre tract out of the William Stoneman Survey, A-250. Camp Oil & Gas Co.'s No. 1 H. F. Peters, 5,300 feet north and 993 feet east of SW cor. of the I. & G. N. Survey, A-1,324, being 150 feet south and west of the NE cor. of their 30-acre lease. Continental Oil Co. and Perkins & Cullum's No. 1 R. Campbell, 150 feet north and 450 feet west of SE cor. of the north 50 acres of Section 1,484, T. E. & L. Pardee and others' No. 2 J. W. Daws, 150 feet north and west of SE cor. of Section 751, T. E. & L.

Robert Oil Corp.'s No. 1 O. E. Allen, 750 feet north and 150 feet west of the SE cor. of the O. E. Allen 106.3-acre tract out of Section 1,901, T. E. & L. Survey. Same company's No. 3 C. E. Graham-B, 150 feet south and 1,010 feet east of NW cor. of the south 100 acres of the north 225 acres of the C. E. Graham 460-acre tract out of Section 3,401, T. E. & L. Survey. Texas Pacific Coal & Oil Co.'s No. 1 W. P. Stinson and others, 300 feet southeast of the northwest line and 300 feet southwest of the northeast line of Section 1,203, T. E. & L. Survey.

Corrected Locations

In Archer County: Allday Oil Corp.'s No. 1 L. C. Herron, 150 feet north and east of the SW cor. of northeast 40 acres (square) of the south 200 acres of the east 300 acres of the William Spavin Survey, A-371.

In Brown County: Selby Oil & Gas Co.'s No. 14 H. J. E'lis, 450 feet south and 750 feet west of NE cor. of their 130-acre lease out of Section 3, S. A. & M. G. Survey, A-850. Smith Oil Co.'s No. 3 M. L. Smith, 150 feet north and 798 feet west of SE cor. of their 60-acre lease out of Section 1, S. A. & M. G. Survey, A-849.

In Runnels County: Ladd, Sillix and others' No. 1 R. M. McMillian and others, 900 feet north and 4,520 feet east of SE cor. of Section 346, B. B. & C. Survey, and located in the Domingo Diaz Survey No. 532, being 2,472 feet south and 850 feet east of NW cor. of the R. M. McMillian and others' 129.83-acre tract.

In Palo Pinto County: Mountain Oil Co.'s No. 1 M. B. Costello, 100 feet north and 1,200 feet west of SE cor. M. B. Costello's 120-acre tract out of the John T. Smith Survey, A-410.

In Clay County—H. R. Edwards' No. 1 J. Wetsel, 550 feet south and 150 feet west of the NE cor. of the J. Wetsel 83.1-tract out of B. B. B. & C. Survey No. 1, A-54.

In Pecos County—McMan Oil & Gas Co. and Marland Oil Co.'s No. 2 I. G. Yates, 275 feet north and 330 feet east of NW cor. of Section 34, and located in Section 34½, Block 194, G. C. & S. F. R. R. Survey. Same company's No. 3 I. G. Yates, 275 feet south and 330 feet east of the SW cor. of Section 103, and located in Section 34½, Block 194, G. C. & S. F. R. R. Survey. Same company's No. 4 I. G. Yates, 275 feet south and 330 feet west of the SE cor. of Section 102, and located in Section 34½, Block 194, G. C. & S. F. R. R. Survey.

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OIL MAPS

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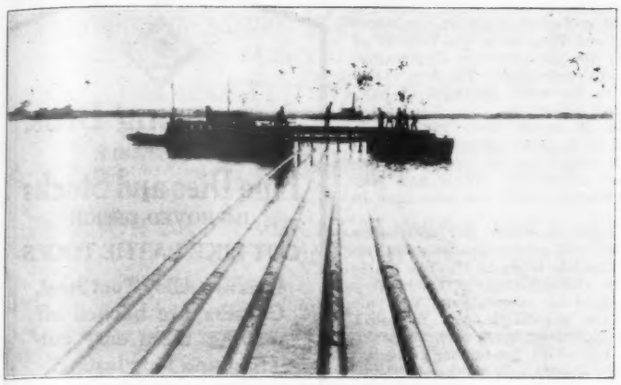

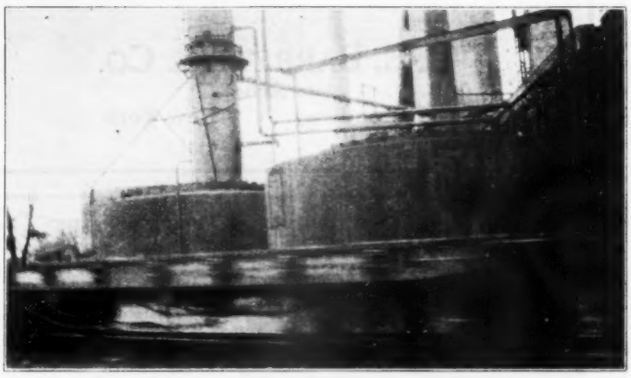

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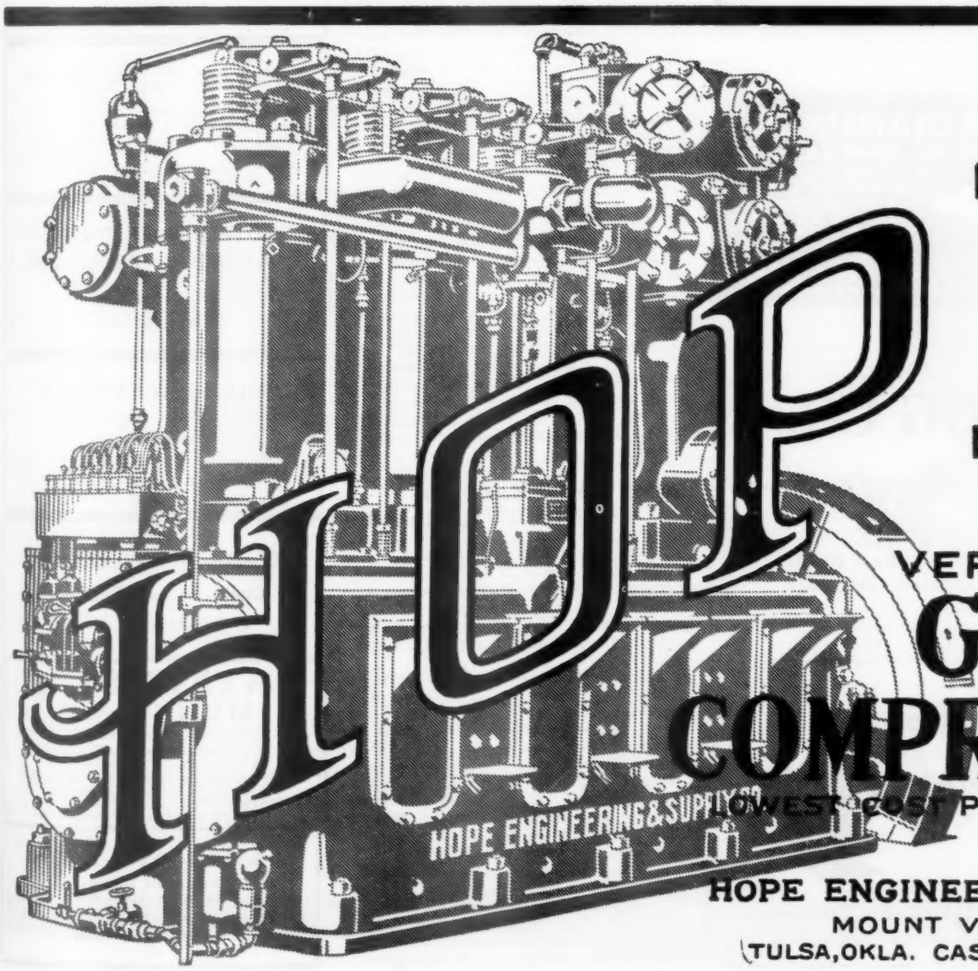

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GEOLOGIST EXPLORES VENEZUELAN STATES

By T. R. Ingram

DENVER, Colo., Sept. 24.—Dean E. Winchester, consulting geologist, has returned to Denver after spending seven months in geological work in the states of Apure and Zamora in the interior of Venezuela for the Sinclair Exploration and affiliated companies. The area examined lies to the south and west of Lake Maracaibo, where the big Venezuelan production is found, from which it is separated by a range of mountains, and about 150 mi'es from the coast. The territory has never been drilled and very little exploration work has been done in it.

The companies which Mr. Winchester represented hold concessions on practically all the public lands in the two states subject to the selection of tracts they desire to hold for exploration. The purpose of the expedition was to select tracts of 10,000 hectacres each (approximately a township) for further geological work. This is to be followed by the choosing of approximately half of each of the tracts first selected, the remainder going back to the governments. The area is tropical and lies five to six degrees north of the equator. Mr. Winchester was accompanied by John Poulin, a graduate of the Colorado School of Mines, who remained in that country. The remainder of the party was composed of natives.

The main body of the State of Apure comprises a territory approximately 200 miles running east and west by 100 miles north and south. The party entered by way of Valencia, where the companies' headquarters are located, to San Fernandez, the capital. The entire state consists of llanos, or plains country, with the exception of the extreme eastern part, and no point rises more than 30 feet above the beds of the Orinoco River and other streams which cut it in numerous directions. Mr. Winchester states that no rock was found and that there was no way to work out the subsurface geology from surface evidence and that as a result no conclusions could be drawn as to whether the chances for finding oil are favorable or unfavorable. The drill alone can disclose the possibilities of the country.

Both states lie in the great basin of the Orinoco River which has a granite uplift on the east and mountains on the west. Fresh snow had fallen on the mountains as late as May 15. Zamora lies to the north of Apure. Here was found sufficient rock to identify the formations, and structures were found that looked good. The country is difficult, however, as it is out of the llanos area and in dense jungle. Previous to Mr. Winchester's trip the companies had sent in a party for general reconnaissance work, but it did no mapping. Another party probably will be sent in to do detail work after the tracts recommended by Mr. Winchester are selected or rejected.

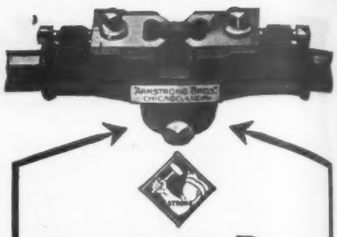
SOME ADVANTAGES OF CONTACT FILTRATION

(Continued from Page 191)

Fahrenheit because of the greater tendency to condense in small laboratory apparatus. Fine clay if wet after introduction into an oil, tends to agglomerate and this frequently, though not always, vitiates its action.

Fine clay is almost universally used by California refiners on their light oils (gasoline, kerosene) after a light acid treat. A good clay is a very efficient remover of mineral acid and at the same time acts to bleach and stabilize the color of light oils. This is done at plant temperatures and in many cases continuously and by mechanical methods of mixing. The system for its use is practically vapor tight, and losses are very low.

The low labor costs connected with the operation of a contact plant are probably the greatest point in its favor, as labor is reduced to a minimum in this system. Labor and power are a small fraction of a cent in contacting any oil (per gallon).



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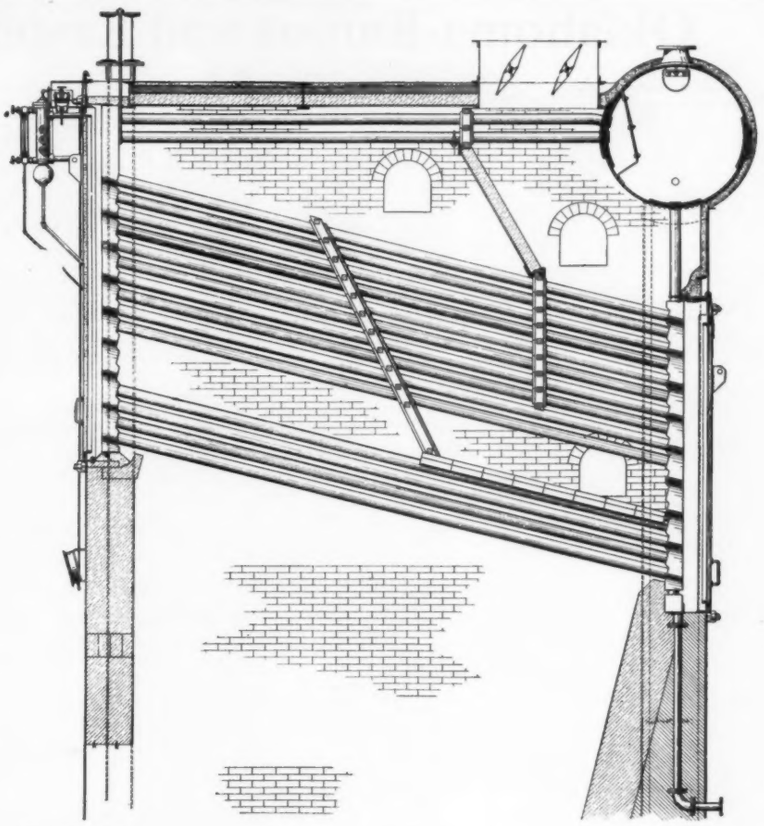

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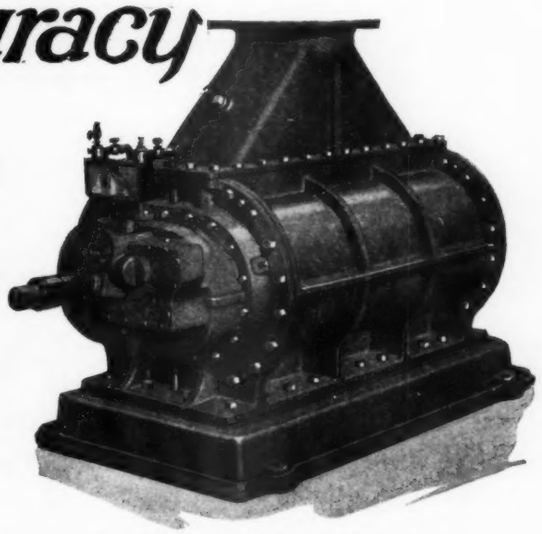

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Oklahoma-Kansas and Eastern Pipe Line Report

OKLAHOMA-KANSAS

Pipe Line Statement for July

Runs

Company—	Month	Daily Av.
*Prairie P. L. Co.	4,603,500	148,500
Gulf Pipe Line Co.	1,329,776	42,896
Texas P. L. Co.	1,124,792	36,286
Empire P. L. Co.	2,273,993	73,355
Magnolia Petr. Co.	1,576,078	50,841
Cosden P. L. Co.	1,238,164	39,941
Sinclair P. L. Co.	3,029,227	97,717
Oklahoma P. L. Co.	3,819,659	123,215
*Other lines	10,974,000	354,000
Total July	29,961,189	966,751
Total June	26,264,739	875,824
Difference	3,696,450	90,927

Shipments

Company—	Month	Daily Av.
*Prairie P. L. Co.	5,788,133	186,714
Gulf P. L. Co.	1,131,314	36,494
Texas P. L. Co.	892,467	28,789
Empire P. L. Co.	1,702,274	54,912
Magnolia Petr. Co.	1,397,870	45,093
Cosden P. L. Co.	1,132,181	36,522
†Sinclair P. L. Co.	2,902,778	93,638
Oklahoma P. L. Co.	3,908,856	126,092
*Other lines	8,587,000	277,000
Total July	27,442,873	885,253
Total June	25,273,132	842,437
Difference	2,169,741	42,816

Stocks

*Prairie O. & G. Co.	30,250,000
Prairie P. L. Co.	2,000,000
Gulf P. L. Co.	8,780,459
Texas P. L. Co.	4,846,951
Empire P. L. Co.	3,849,034
Magnolia Petr. Co.	5,744,633
Cosden P. L. Co.	3,032,971
*Sinclair Crude Oil Pur. Co.	19,700,000
Oklahoma P. L. Co.	2,191,361
Carter Oil Co.	15,746,013
*Other lines	10,000,000
Total July	106,141,422
Total June	103,378,545
Difference	2,762,877

*Estimated. †Prairie Pipe line shipments include Texas crude oil and Sinclair Pipe line shipments include Texas and Wyoming crude oil.

Note—Stocks do not include approximately 5,000,000 bbls. of crude oil held in storage in private tank farms and leases and approximately 1,850,000 of Texas Panhandle crude oil in storage in Oklahoma and Kansas.

EASTERN PIPE LINES

Runs from Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for July and August:

	July, '27	Aug. '27
Nat. Transit	155,782.70	146,479.36
S. W. Pa. P. L.	85,622.93	86,548.23
Eureka P. L.	378,082.34	395,237.23
Buckeye P. L. (Macksburg)	319,986.23	343,331.35
Buckeye P. L. (Cleve)	11,219.55	11,953.23
Buckeye P. L. (Lima, etc.)	126,613.83	139,837.26
Indiana P. L.	9,105.05	8,905.59
Cum'land P. L.	261,877.90	267,515.04
N. Y. Transit	22,074.99	25,028.15
Tidewater P. L.	185,203.73	197,502.70
Pure Oil	157,734.23	164,866.70
Emery P. L.	54,627.01	59,569.14
Paragon Dev.	28,004.42	30,553.65
Pgh. P. L.	5,520.99	4,824.41
Stoll Oil Ref.	14,258.01	14,831.15
Total	1,815,803.91	1,886,983.19
Daily average	58,574.32	60,870.42

Note—Indian Refining Co. also reported other receipts of 415,944.89 bbls. Paragon Refining Co. had other receipts of 175,142.86 bbls. Paragon Development had other receipts of 818.77 bbls. Pure Oil had other receipts of 25,375.12 bbls.

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for July and August:

	July, '27	Aug. '27
Nat. Transit	330,044.32	344,779.78
S. W. Pa. P. L.	343,850.84	343,310.98
Eureka P. L.	183,351.51	198,755.14
Buckeye P. L. (Macksburg)	175,567.01	153,543.57
Buckeye P. L. (Cleve)	971.94	727.48
Buckeye P. L. (Lima, etc.)	954,040.89	748,093.86
Indiana P. L.	1,038,598.35	868,709.30
Cum'land P. L.	139,659.15	150,233.42
N. Y. Transit	364,628.62	289,844.19
Northern P. L.	200,019.17	196,331.58
Tidewater P. L.	166,016.04	150,113.65
Pure Oil	165,167.59	205,913.45
Emery P. L.	57,048.51	54,557.91
Paragon Ref.	176,876.31	177,675.03
Indian Ref.	400,446.10	379,066.52
Paragon Dev.	29,982.32	31,192.30
Pgh. P. L.	5,593.34	5,395.27
Total	4,691,862.02	4,298,243.43
Daily Average	151,350.39	138,653.01

Gross Stocks

The gross stocks held by various pipe lines in the oil producing sections of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky, at the close of July and August:

	July, '27	Aug. '27
Nat. Transit	1,137,052.50	1,129,180.77
S. W. Pa. P. L.	684,337.22	683,536.32
Eureka P. L.	1,859,908.44	1,949,985.99
Buckeye P. L. (Macksburg)	407,391.62	416,688.27
Buckeye P. L. (Cleve.)	36,605.62	39,918.38
Buckeye P. L. (Lima, etc.)	4,280,952.96	4,668,115.54
Indiana P. L.	618,014.38	620,873.22
Cum'land P. L.	579,849.23	591,843.81
Southern P. L.	433,210.34	429,471.58
N. Y. Transit	419,558.02	460,922.97
Northern P. L.	487,732.61	470,102.63
Pure Oil	412,670.10	395,429.71
Emery Pipe	7,901.54	13,506.50
Paragon Ref.	18,557.87	15,696.20
Indian Ref.	58,707.96	93,156.64
Paragon Dev.	6,514.28	6,821.39
Pgh. P. L.	4,163.23	3,864.26
Total	11,453,127.97	11,989,115.18
Decrease	40,545.24	
Increase		535,987.21

Grades of Oil

The following table shows the amount of the different grades of oil held by the Eastern pipe lines at the close of July and August showing the gross stocks of the above fields:

	July, '27	Aug. '27
Penna.	4,190,178.95	4,238,474.19
Lima	1,006,906.85	1,018,062.71
Kentucky	1,129,805.76	1,134,629.10
Mid-Cont.	5,079,649.41	5,531,964.28
Illinois	46,587.00	65,984.90
Total	11,453,127.97	11,910,115.18

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1924	1925	1926	1927
Jan.	62,638	56,831	55,630	56,209
Feb.	68,023	60,606	60,394	61,298
March	68,731	60,575	61,644	63,247
April	71,055	62,962	63,019	60,337
May	63,942	59,217	60,580	60,284
June	63,230	61,270	64,131	62,757
July	64,208	62,639	63,206	58,574
Aug.	59,942	59,686	61,815	60,870
Sept.	62,930	62,510	64,639	.....
Oct.	64,976	60,995	62,704	.....
Nov.	56,282	59,350	61,774	.....
Dec.	55,814	57,974	58,755	.....

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1924	1925	1926	1927
Jan.	145,518	157,889	156,056	141,227
Feb.	148,732	160,863	159,488	138,534
March	147,098	154,591	150,229	133,777
April	147,611	151,429	152,371	140,227
May	134,997	146,995	160,998	144,894
June	143,010	149,467	160,257	149,772
July	124,187	161,338	160,245	151,350
Aug.	123,120	161,730	151,929	138,653
Sept.	127,325	156,719	158,915	.....
Oct.	123,170	145,388	161,132	.....
Nov.	124,400	143,582	152,668	.....
Dec.	151,392	150,162	136,428	.....

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines at the close of each month for the past three years:

	1925	1926	1927
Jan.	11,353,276	9,859,170	9,718,061
Feb.	11,192,924	9,579,354	10,113,161
March	11,155,297	9,438,292	10,794,944
April	11,062,082	9,805,861	11,112,395
May	11,207,562	9,531,757	11,359,381
June	11,093,796	9,585,904	11,493,673
July	11,067,453	9,734,687	11,453,120
Aug.	10,974,481	9,668,947	11,989,115
Sept.	10,781,753	9,433,732	.....
Oct.	11,036,850	9,269,806	.....
Nov.	11,068,158	9,257,667	.....
Dec.	10,458,445	9,454,512	.....

Franklin Pipe Line Co.

The following table exhibits the condition of the Franklin Pipe Line at the close of business for the months named and not counted in the stocks and averages reported above.

1926—	Runs	Shipments	Stocks
July	3,025,86	4,075.11	13,809.18
August	2,886.59	2,121.21	14,574.56
Sept.	2,788.18	3,373.06	13,986.68
Oct.	2,991.86	2,307.75	14,671.81
Nov.	2,810.60	1,664.55	15,817.31
Dec.	2,847.52	5,561.11	13,103.72
1927—			
Jan.	2,641.54	1,470.42	14,274.84
Feb.	2,764.30	1,082.82	15,956.32
March	2,587.20	1,378.56	16,664.96
April	2,834.23	1,512.65	17,986.54
May	2,768.47	539.29	20,215.72
June	2,946.29	664.40	22,497.61
July	3,153.39	1,276.61	24,374.39

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Runs from wells	621,398.26
Gross stocks, Sept. 1	2,110,156.78
Other receipts	364,647.26
Regular deliveries	500,604.78
Other deliveries	377,657.70

The amount of Illinois oil run by the Tide Water Pipe Co. in August was 29,878.15 bbls. and deliveries were 28,726.64 bbls. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries as follows:

1926—	Runs	Deliveries
July	713,490.66	490,092.82
August	701,795.92	555,766.59
Sept.	688,798.66	516,083.05
Oct.	681,648.96	531,467.39
Nov.	651,263.33	498,439.37
Dec.	668,909.58	537,947.61
1927—	Runs	Deliveries
January	621,421.03	530,088.98
February	595,831.16	476,950.71
March	727,593.91	554,947.43
April	593,225.97	444,318.49
May	728,759.40	543,192.03
June	640,975.85	532,217.78
July	613,901.30	484,902.53
August	651,276.40	529,331.37

Tide Water Pipe Co., Ltd., also delivered in August, 127,490.55 bbls. of Oklahoma oil.

AVERAGE DAILY RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF COAST PORTS

Average bbls. per day—	ATLANTIC PORTS						GULF COAST PORTS					
	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total All Ports
March	16,616	5,484	56,710	13,871	13,419	106,097	.....	.....	.....	484	.....	106,581
April	12,667	4,367	47,667	15,100	13,200	93,100	.....	.....	.....	.....	.....	93,100
May	10,452	7,645	18,387	9,226	6,226	51,935	.....	.....	.....	.....	.....	51,935
June	25,567	11,233	48,833	17,367	17,367	120,367	.....	.....	.....	.....	.....	120,367
July	13,484	17,290	33,065	9,129	5,451	78,419	.....	.....	.....	968	.....	79,387

AVERAGE DAILY IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

Average bbls. per day—	ATLANTIC PORTS						GULF COAST PORTS					
	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	All Ports
March	4,677	13,161	63,484	9,226	26,129	116,677	6,743	36,258	2,419	4,871	50,290	166,967
April	22,700	9,033	62,033	6,067	26,567	126,400	5,067	18,033	.....	.....	23,100	149,500
May	21,032	9,807	93,452	7,774	23,580	155,645	1,807	30,612	1,936	.....	34,355	190,000
June	18,167	9,700	83,867	10,900	16,567	139,200	2,000	31,800	.....	.....	33,800	173,000
July	22,226	10,387	80,193	7,193	38,710	158,710	3,226	25,065	806	.....	29,096	187,806

GROSS PRODUCTION OF THE UNITED STATES FOR 12 MONTHS

(IN BARRELS)

1926—		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Rocky Mountains	Eastern Fields	Total
August:	Month	18,765,080	14,618,236	17,093,586	3,681,436	4,878,191	2,190,739	3,457,697	3,339,500	68,024,465
	Daily average	605,325	471,556	551,406	118,756	157,361	73,896	111,538	107,726	2,194,338
September:	Month	18,104,954	14,466,510	17,580,100	3,450,060	4,603,230	2,079,840	3,141,123	3,330,000	66,755,817
	Daily average	603,498	482,217	586,003	115,002	153,441	69,328	104,704	111,000	2,225,194
October:	Month	18,966,058	15,720,689	19,001,388	3,714,637	4,625,138	2,166,559	3,071,720	3,398,000	70,664,189
	Daily average	611,808	507,119	612,948	119,827	149,198	69,889	99,088	109,613	2,279,490
November:	Month	19,173,128	16,876,950	18,593,160	3,593,490	4,299,480	2,054,911	2,842,587	3,216,000	70,649,706
	Daily average	639,104	562,565	619,772	119,783	143,316	68,497	94,752	107,200	2,354,990
December:	Month	20,276,950	17,882,908	19,753,591	3,654,156	4,266,189	2,018,734	2,658,301	3,313,000	73,823,829
	Daily average	654,095	576,868	637,213	117,876	137,619	65,120	85,752	106,871	2,381,414
1927—										
January:	Month	20,184,872	19,035,426	18,605,363	3,769,879	4,076,469	1,905,570	2,620,303	3,332,500	73,530,382
	Daily average	651,125	614,046	600,173	121,609	131,499	61,470	84,203	107,500	2,371,948
February:	Month	17,982,711	19,752,348	16,483,712	3,352,076	3,574,256	1,784,104	2,385,135	3,007,200	68,321,542
	Daily average	642,240	705,441	588,704	119,717	127,652	63,718	85,183	107,400	2,440,067
March:	Month	19,835,724	22,480,921	18,232,817	3,675,143	3,853,920	2,032,982	2,476,798	3,335,800	75,923,906
	Daily average	639,862	725,191	588,149	118,553	124,320	65,580	79,574	105,100	2,449,158
April:	Month	19,493,825	22,208,130	17,801,140	3,516,930	3,378,240	1,994,330	2,615,770	3,474,000	74,482,365
	Daily average	648,870	740,271	593,371	117,231	112,608	66,491	87,193	115,800	2,482,745
May:	Month	19,506,054	23,258,463	19,539,083	3,704,314	3,493,669	1,935,175	2,742,588	3,467,000	77,646,346
	Daily average	629,238	750,273	630,293	119,494	112,699	62,425	88,471	111,839	2,504,721
June	Month	19,181,442	22,830,330	18,399,810	3,437,580	3,365,760	1,880,820	2,592,437	3,330,000	75,018,179
	Daily average	639,381	761,011	613,327	114,586	112,192	62,694	86,414	111,000	2,500,606
July:	Month	19,319,021	26,522,546	17,607,194	3,454,082	3,406,682	2,279,405	2,635,607	3,373,000	78,597,538
	Daily average	623,194	855,566	567,974	111,422	109,893	73,529	85,020	108,806	2,535,401
	Total 12 months	230,789,819	235,653,457	218,690,744	43,003,782	47,821,225	24,323,169	33,239,966	39,916,000	873,438,262
	Daily average	632,301	645,626	599,153	117,819	131,017	66,639	91,068	109,359	2,392,981

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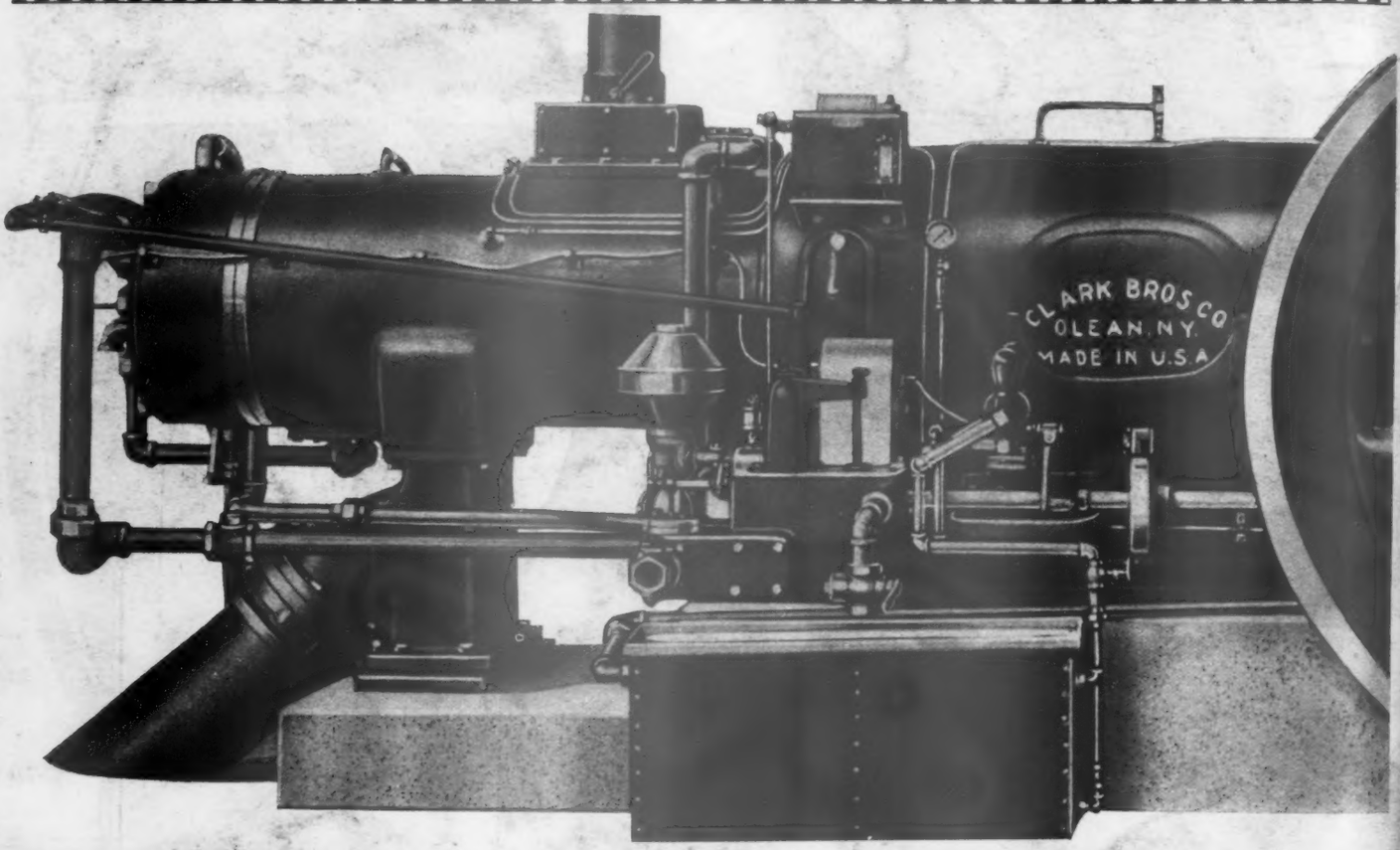

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